THE Soybean Digest

Soybeans: The Miracle Crop of the 20th Century

A Soybean Digest extra

Members of the U. S. soybean trade development team in Yokohama harbor. See page 6.

Soybean Oil Meal in Livestock and Poultry Feeds

Special reports by L. E. Hanson and J. W. Hayward

JANUARY • 1958

VOLUME 18 • NUMBER 3

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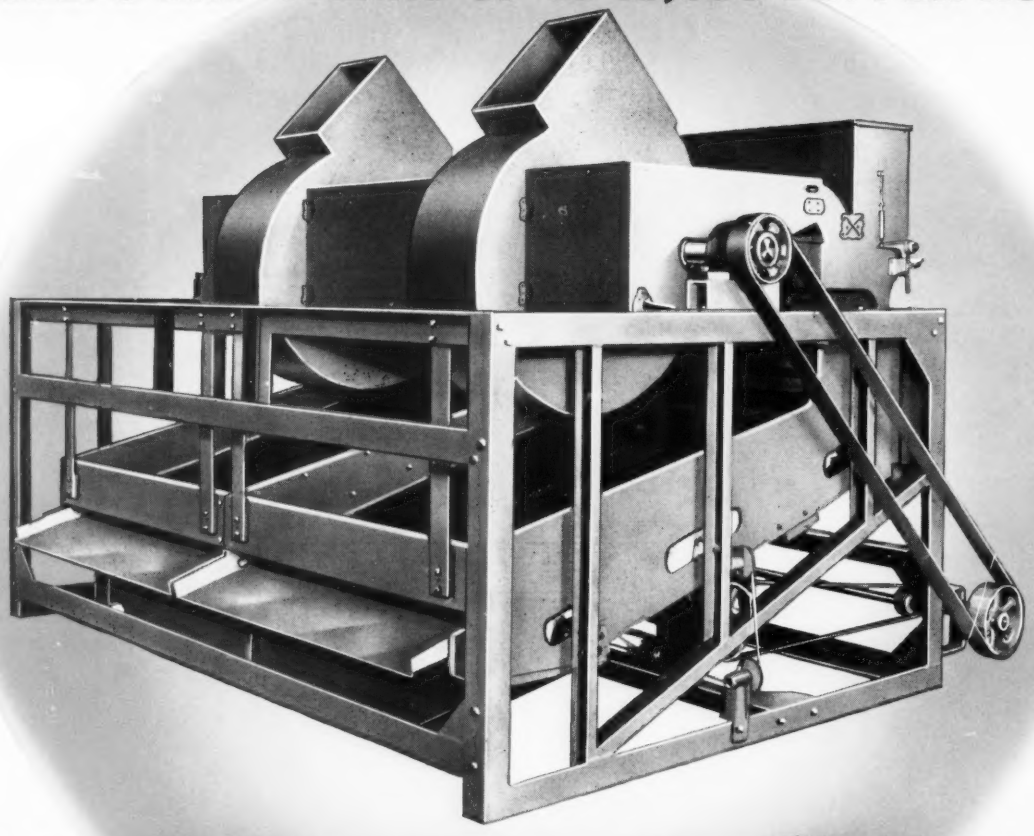

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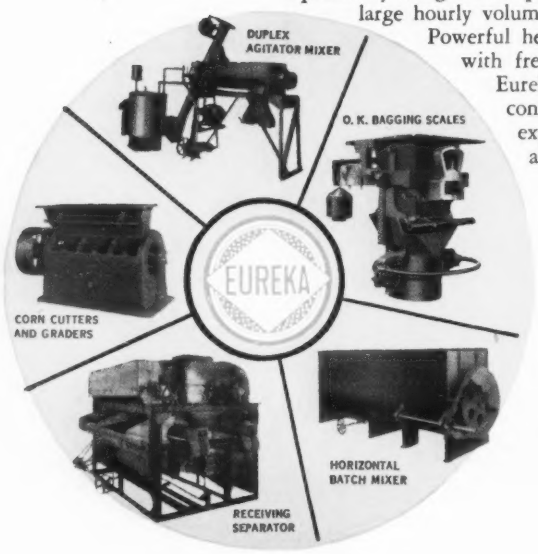

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HUDSON, IOWA

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THE SOYBEAN DIGEST

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THE AMERICAN SOYBEAN ASSOCIATION

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Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safeguarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the industry.

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EDITOR'S DESK

. . . By GEO. M. STRAYER

COMMODITY GROUPS WORK TOGETHER

It is now quite generally agreed among farmers that the answers to the problems of American Agriculture will never be entirely solved by the actions of government. But in an economy where other segments do have subsidization of various types it is also impossible to remove government from agriculture. With government subsidy of labor through minimum wage laws and protected unionism, with governmental subsidy of business through tariffs and quotas and trade arrangements it is utterly foolish to talk in terms of turning agriculture back to the so-called "free days" of 30 years ago.

Serious thought about the present pattern of American Agriculture and the needs of tomorrow is healthy. Serious analysis of the successes and the shortcomings of present farm programs is wise. The men best qualified to analyze their own industries are the men working in them.

Representatives of the American Soybean Association have been present at the meetings of the Conference of Commodity Organizations which have been held in recent months. We need to know the leadership in the other commodity organizations in agriculture—we need to know their thinking and their planning—we need to help them with their problems as we can do so—and we need to enlist their aid in the solution to our problems.

The men who are spending their time and efforts in this move are to be congratulated. Healthy self-analysis is profitable, and if the Conference does nothing more than provide the vehicle for the men in agriculture to look at themselves and others it has been worthwhile. Out of it may come something far more constructive as Congress meets again.

WHY NO ACTION TAKEN ON P. L. 480?

Why have the mechanisms of marketing provided in Public Law 480 been inactive in moving soybean oil, the only soybean product available on the P. L. 480 list? Why, on Jan. 1, have there been no movements of soybean oil in quantity? Why are we so far behind last year in this respect? Is it because there is no need? Because of breakdown in negotiations? Because of lack of proper timing? Who is to blame that the benefits of sales under P. L. 480 have not accrued to soybean producers—but will probably accrue to those handling and processing the crop? Was this the intent of the law?

Undoubtedly a major factor is the extremely late passage of the appropriation bill by Congress. Held for months, it became bogged down behind controversial legislation and went far beyond the expected date. No negotiations—no sales—no promises could be made. .But the appropriation was passed months ago, and even now nothing much happens.

What must we do to complete sales on soybean oil, cottonseed oil or lard? To prevent huge take-over of 1957-crop soybeans by CCC? And the beginning of the same type of debacle existent in other commodities? Is it not better to take preventative steps now than to try to work out of the certain mess which will be created by continued failure to act?

Last year an excellent job was done. A huge crop of soybeans was merchandised, used and removed from potential stockpiles. Time marches on, we have an even larger soybean crop, and we are not selling oil. What are we waiting for?

WE DON'T NEED MORE ACRES IN '58

The soybean market is now feeling the effects of the 40-million-bushel increase in production. We can begin to sympathize with the problems of surplus commodities, even though ours is not yet in that category. We have about reached the point of diminishing returns in soybean acreage unless we do a better job of marketing. We have learned to place huge quantities of soybeans and soybean products in the markets of the world, but even those markets eventually reach saturation.

It is now time to start planning on 1958 soybean acreage. It is now time to resolve that each of us, as a producer, will do his part in preventing further increases in acreage beyond our capacity to consume and market. At this time it would seem that any acreage beyond 1957 levels will merely bring *lower total returns* on the crop —or place the marketing in governmental hands. Neither is to be desired.

Let's be realistic in making plans for 1958 soybean acreage. Let's use the experience of the past and keep our crop in favorable position price-wise by controlling our own production rather than turn to government to do the job for us.

There should be no more acres of soybeans than in 1957! And that applies to your farm, too!

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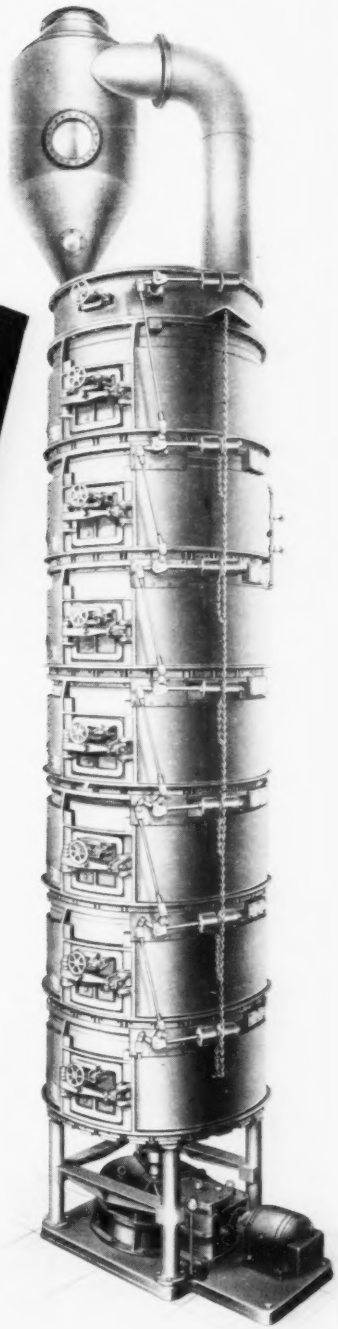

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REPORT OF U. S. SOYBEAN TEAM—

Dollar Shortage in Japan Cramps Sales

JOHN EVANS identifies weed seed and foreign material in American soybeans at Hohnen Oil Co., Shimizu. At left is Shizuka Hayashi.

TEAM at the Ajinomoto Co. processing plant and monosodium glutamate factory, with Shizuka Hayashi of the Japanese American Soybean Institute, and Ajinomoto staff members.

TEAM members (l. to r.) Howard McWard, John Sawyer, John Evans and David Wing with members of Tokyo grain exchange.

By **JOHN SAWYER**
President, American Soybean Association
London, Ohio

ON OCT. 31, the U. S. soybean trade development team departed from Minneapolis bound for Tokyo, Japan. Thus began one more phase of the original world-trade market development work pioneered by the American Soybean Association.

This project, like others more recently established by the Soybean Council of America, was made possible by Public Law 480. By this law, the Foreign Agricultural Service of the U. S. Department of Agriculture was authorized to enter into a contract with the American Soybean Association and Japanese soybean industry groups, for the purpose of promoting sales and developing markets for American soybeans and soybean products in Japan.

Besides permitting this contract, P. L. 480 also provided that foreign currencies held by the United States as a result of sales of U. S. surpluses could be used to finance up to 90% of the needs of the project. The member groups, the Japanese soybean industry and the American Soybean Association provided the remaining 10%. Management of this operation known as the Japanese American Soybean Institute was also made the responsibility of the two member groups.

In selecting this U. S. soybean trade development team, efforts were made to include representatives of all phases of our soybean industry.

Team Members

Three of the team were soybean growers and members of the American Soybean Association. They were: John W. Evans, from Montevideo, Minn., a past president and now a member of the board of directors of the American Soybean Association; David G. Wing, from Mechanicsburg, Ohio, also a past president and one of our directors. Mr. Wing is also vice president of the Soybean Council of America. I was the third representative of the American Soybean Association.

Other members of the team were: Howard McWard, assistant general manager of the Illinois Grain Corp., also representing the cooperative grain marketing organizations of the Midwest; John N. Haymaker of Cargill, Inc., from Minneapolis, representing his own company as well as other processors and exporters of U. S. soybeans; and James W. Martin, director of trade development of the Port of New Orleans, representing all ports that handle U. S. soybeans.

Our arrival in Tokyo immediately introduced us to the sincere and never ending graciousness of the Japanese people. At the airport waiting to greet us were approximately 30 gentlemen of the Japanese soybean industry, many of whom we had met previously and knew only slightly from their visit to the United States. But we were soon to become very good friends.

The following day we began our very busy schedule which had been carefully and cleverly planned by S. Hayashi, managing director of the Japanese American Soybean Institute.

We began our busy program by calling on Mr. Termohlen, U. S. attache to Japan. Mr. Termohlen introduced us to Ambassador McArthur and Mr. Thibeaudeaux, his economic advisor, who quickly explained general economic relationships between Japan and the United States.

We continued on our project by meeting with various high officials of the Japanese Ministry of Agriculture. We discussed the economic as well as physical circumstances and complications, both bad and good,

involved in the sale of American soybeans to Japan. Again, as was always the case, we were treated most graciously. For a period of 3 weeks we made a very thorough and exhausting tour of most all phases of the Japanese soybean industry.

Included in this busy schedule were visits at and with representatives of shoyu, miso, tofu and monosodium glutamate plants, all of these being made from soybeans or soybean oil meal and an important part of the diet of the Japanese people. We also were visitors at soybean processing plants. In addition, we had a luncheon with the importers and visited Kyoto University where and with whom the Japanese American Soybean Institute is conducting joint experiments on natto, another soybean food.

We flew to the northern island of Hokkaido where most of the Japanese soybeans are produced, saw many farms and observed many local customs.

Everywhere we went we met alert and serious people. They have a definite goal and great determination. With all this seriousness they were extremely patient and gracious. We never had a chance to wish for anything.

Need Soybeans

During these visits and meetings we learned the Japanese people want and need soybeans. Japan has a population of approximately 90 million people in a land area nearly the size of California. However, only 15% of this is arable. Because rice is the crop that can produce the most food per acre, this is their primary crop. To balance their diet, Japan must have soybeans. Since there isn't land enough to produce this need in Japan, it must be purchased.

The Japanese people want a dependable supply of soybeans. For this reason, they are interested in American soybeans. Some soybeans are purchased from Manchuria but there has been doubt as to the dependability of this supply.

There are, of course, objections and complications to American soybeans. We heard many objections from those who actually use soybeans and sell their products. Objections varied according to the use. U. S. soybeans are high in oil content. This was pleasing to the oil processors but not so desirable for the food industries who use the whole soybean.

There were also many legitimate complaints about the percentage of foreign material in shipments. The food manufacturer definitely must have clean soybeans. In the United States we don't like foreign material but it is not as critical as it is for those who make human food from soybeans.

Problems of F. M.

Because Japan's domestic production has had no foreign material problem, there are very few cleaning facilities. Without these facilities foreign material is a serious problem and handicap when found in U. S. soybeans. This situation has improved greatly since the grade changes were made for which the American Soybean Association fought so vigorously in 1955. There still could be more improvement and we will, of course, strive to achieve it.

In addition to foreign material, there were criticisms of non-uniformity of size which created cooking problems. There were objections to color and, in some cases, soybeans were too small. Miso manufacturers mentioned the taste of their product made from U. S. soybeans often lacked a sweetness and a smoothness.

Another and possibly more difficult problem is presented on the economic side. Japan wants to buy more soybeans than presently are being purchased.

In spite of this, the planned purchases of soybeans have been reduced. The problem is based on availability of dollars and the general economic condition of Japan. All purchases of U. S. soybeans must be made in dollars.

Until this year many dollars found their way into Japan's economy as a result of military and so called "off shore" expenditures. Our armed forces are being greatly reduced in Japan and our dollar expenditures are also being reduced. As a result, this accumulation of dollar reserves which Japan has is rapidly declining. Because of this, the plans to purchase soybeans for dollars had to be reduced. They were reduced almost 25%.

Our Japanese American Soybean Institute has done and is doing a fine job of promoting interest in and a desire for American soybeans. Growers and handlers are continuing to improve crops and shipments to better satisfy this demand.

However, in spite of these worthy endeavors, if Japan has a shortage of dollars, there will be no sales of U. S. soybeans. Therefore, to protect and strengthen this great potential market, it becomes obvious that every member of our soybean industry must at all times assist in improving trade and trade relations between Japan and the United States.

THE COVER PICTURE

FOUR MEMBERS of the soybean trade development team in Yokohama harbor. They are: (l to r) James W. Martin, David G. Wing, John N. Haymaker and John W. Evans.

The photo is courtesy of Hiroshi Nakamura, Hohnen Oil Co.

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SOYBEAN COUNCIL OF AMERICA, INC.

Approve Industry Liaison Committee

CREATION of an inter-industry liaison committee for fats and oils groups to consider problems and opportunities for fats and oils in foreign markets was approved by the board of directors of the Soybean Council of America at its meeting in Chicago Dec. 5.

The board accepted the report of the joint committee of soybean and cottonseed groups which recommended setting up of such a liaison committee, which would meet at least once a year.

The function of the new inter-industry committee will be to consult and advise but not to attempt action programs in its own name. Any suggestions for action will be referred to the parent organizations. The committee is expected to encourage cooperation between fats and oils groups on existing market development projects in foreign countries and to explore possibilities for new projects.

The new committee, according to the plan, would be made up of:

1—Six cottonseed representatives selected by the National Cotton Council and the National Cottonseed Products Association in consultation with other industry groups.

2—Six soybean representatives selected by the Soybean Council of America in consultation with other industry groups.

3—It is also suggested that the American Meat Institute be invited to participate and to designate three representatives.

Action by the National Cotton Council and the National Cottonseed Products Association in approving the proposal was still pending as the Digest went to press. The lard and export committees of the American Meat Institute have recommended that its board accept the proposal.

Soybean representatives named to serve on the fats and oils inter-industry liaison committee include:

Dwayne Andreas, Honeymead Products Co., Mankato, Minn.; William Huge, Central Soya Co., Fort Wayne, Ind.; David G. Wing, Mechanicsburg, Ohio; Ersel Walley, Walley Agricultural Service, Fort Wayne, Ind.; A. C. Hoehne, Archer-Daniels-Midland Co., Minneapolis; and Geo. M. Strayer, executive director of the Council, Hudson, Iowa. They are all members of the Council's trade development committee.

* * * * * *

The Council approved the application for membership in the Council of the North American Export Grain Association and notified the Association that it should name a representative to the Council board.

AMERICAN SOYBEAN ASSOCIATION

May Send Nematode Team to Japan

THE AMERICAN Soybean Association will back the rapid completion of surveys to locate infestations of the soybean cyst nematode in growing areas by the U. S. Department of Agriculture and state departments of agriculture, it was decided by the ASA board of directors at their meeting in Chicago Dec. 6-7.

The Association suggests sending a study team to Japan to investigate the nematode in that country and to learn if nematode-resistant strains exist there. The Japanese have been living with the nematode for some time and undoubtedly much can be learned by sending U. S. specialists to Japan.

The proposal is to send a USDA nematode specialist and also a plant breeder, the project to be financed by P. L. 480 funds. The project, if put into effect, will be a joint undertaking of ASA, Agricultural Research Service and Foreign Agricultural Service of the Department of Agriculture.

J. F. Spears and Robert Bills of USDA's plant pest control branch met with ASA's board of directors and outlined the work that has been done and what still needs to be done.

Considerable survey work has been completed in most leading soybean states, but a comparatively small amount of work has been done in Indiana and Minnesota and none in Iowa.

To date counties found to be infested include two in Arkansas, one in Kentucky, one in Mississippi, three in Missouri, three in North Carolina and four in Tennessee.

So far no infestations have been found in the upper Mississippi Valley, but workers believe that the nematode exists farther north than it has been found. Workers point out that almost all infestations found in Mississippi River Delta areas are located between the river and the levee. This would indicate that the nematode has come downriver from more northern soybean growing areas.

* * * *

The ASA board recommended to the Department of Agriculture that it establish a price support of not less than 70% of parity on 1958-crop soybeans, the same as on the 1957 crop. Whether the rate will be above or below the $2.09 support rate on the 1957 crop depends on the parity level.

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AMERICAN SOYBEAN ASSOCIATION

Late News

Vol. 5, No. 31
Hudson, Iowa
Jan. 6, 1958

Published 32 times yearly as a service to the soybean industry.

SOME BEANS NEVER HARVESTED

After the longest harvest and poorest harvest conditions in recent years, at least **some small part of the crop remained in the field in many soybean states at the turn of the year**—and some acreage in many states will be abandoned.

Much of the crop coming out of fields late had too high moisture content for safe storage, but apparently most such beans went direct to the processors, and there seems to be little worry most places about stored beans going out of condition or being dumped on the market. Of course, nobody knows how many high-moisture content beans are in farm storage, and some of these may be marketed in the spring.

Latest Weather Bureau reports on the harvest: Iowa, about all soybeans have been harvested that are expected to be harvested. Subsoil moisture best in 4 years for this time of year. Ky., losses of soybeans severe on bottoms and flat uplands of western one-third of state. Md., Del., harvesting remaining soybeans on Delmar peninsula halted by rains. N. C., 82% harvested. S. C., 90% harvested. S. Dak., virtually all soybeans harvested. Loss high on late harvested fields due to shelling of soybeans. Tenn., some soybeans still in fields. Some losses due to flooded bottomlands. Va., harvest two-thirds completed, with some moisture damage evident.

Our local reports on the percent of the crop still unharvested in late December: southeast, south central Ark. 3%; Blytheville, Ark., few if any good beans left in fields; central Ark., 2% or 3% abandoned due to high water; S. C. and Savannah River area, Ga. 5%-7%; southeast Ill. 3%; Ray County, Ind. 3%; central Ind. 2%-3%; Tippecanoe County, Ind, ½%; Ind. ¼%; Mason City, Iowa 3%; East Carroll Parish, La. 20%; south central Minn. 5%-10%; Montevideo, Minn. 2%; Sharkey County, Miss. 5%; north central Mo. 5%; Mo. 5%; Van Wert, Ohio 2%; Midsouth 5%-7%. Tidewater, Va. 10%; Essex County, Ontario 3%.

Master Feed & Grain Co., Orangeburg, S. C.: "Harvest about 90% complete. 10% may be abandoned due to wet weather and other causes. Excessive rains during harvest season caused about 10% loss of acres harvested due to lodging and shattering. Oil content reported lower than in recent years, which may be due to excessive moisture. Insect damage heavy prior to harvest. Estimate 20% of crop will go in government loan or on farm storage."

MARKET OUTLOOK

Some recent comments on the market outlook:

Dixon Jordan, Standard Commission Co., Memphis: "We do not expect any upturns of consequence until the door closes on the loan Jan. 31. **If a large quantity of beans is in loan at that time an artificial scarcity could develop in the spring."**

Trade News Service, New York, N. Y.: "With the price of soybeans the lowest in years, as far as the importer is concerned, we may well expect a step-up in export activity in soybeans to beyond the current estimate of 85 to 90 million bushels. In spite of the record crush in November, crushers have added to their stock of soybeans and this trend may have continued in December. There is every basis for expecting a **sharp recovery in the price of soybeans before many weeks have passed."**

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The University of Illinois grain marketing staff notes: "Soybean crushing for October and November totaled 57.4 million bushels compared to 54.5 the same months a year ago. If this difference continues, about 333 million bushels will be crushed and **about 35 million bushels will remain as carryover next Oct. 1.**

GREAT BEAN ACREAGE IN 1958?

Our observers do not all agree on the prospects for increased or decreased soybean acreage in 1958 — as is to be expected this early — but they lean a little toward **more acres, the greatest in soybean history.**

The reasons: Disappointment with the 1957 milo crop due to its severe lodging and high moisture content. Much small grain acreage was not planted this past fall due to the heavy rains, and much of the ground may go to beans in the spring. Considerable plowing and other fall work was not done due to the inclement weather. There will be a heavier work load than normal in the spring — and anything that makes for late plantings tends to increase soybean acreage.

Quoting Chas. V. Simpson, Waterville, Minn.: "Many farmers in this area are considering shifting some of their corn acreage to beans. There will be an extremely large amount of extra spring work on farms. If the spring is late we will see the soybean acreage increase."

Floyd Poyzer, Amenia Seed & Grain Co., Amenia, N. Dak., looks for an increase in soybean acres in the Red River Valley, since producers there have found that beans will withstand extreme weather conditions.

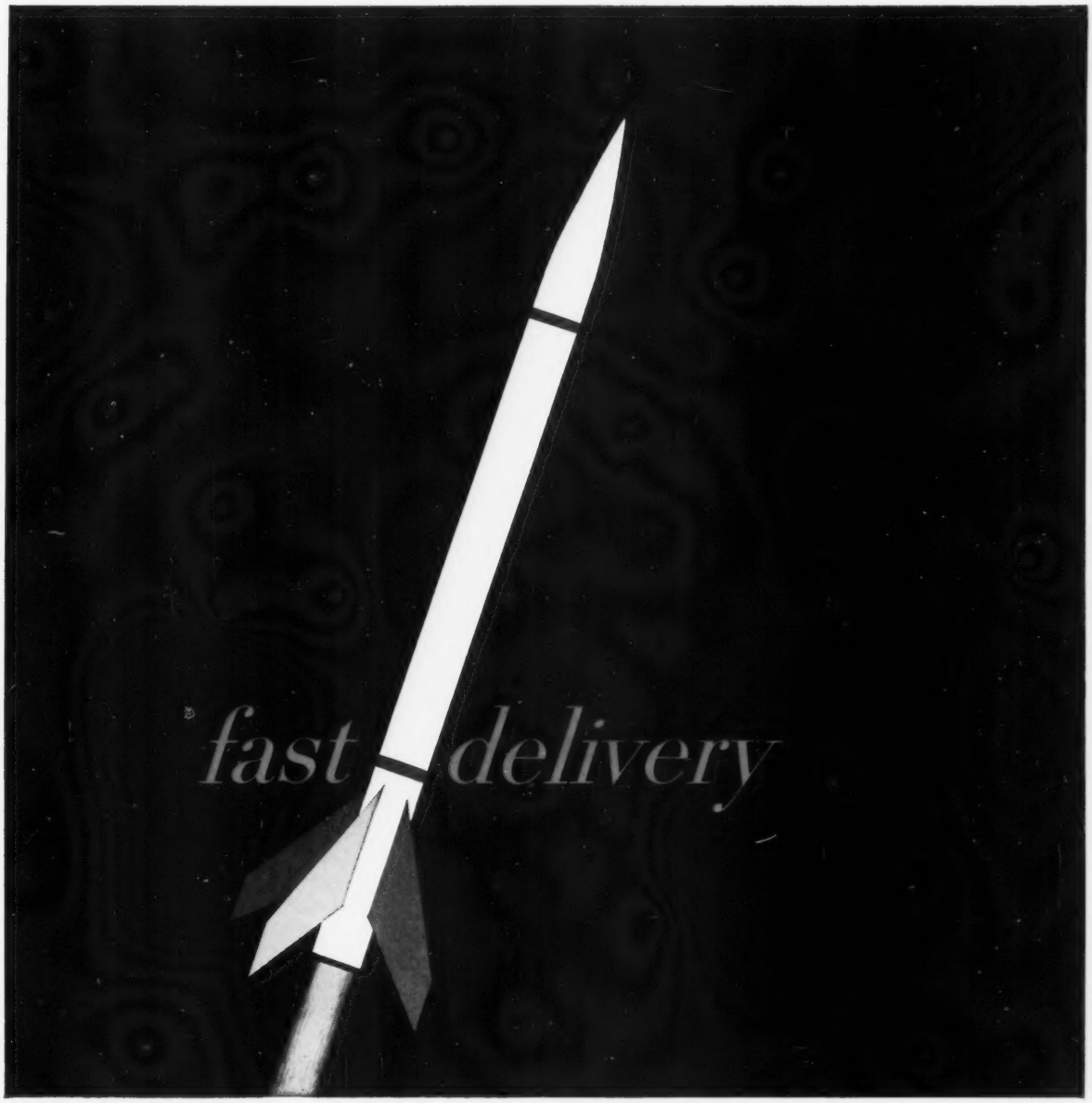
There is some belief that Illinois soybean acreage will go down in 1958 as many farmers will plant corn without regard to allotments. Also, in the Decatur, Ill., area blight cut yields on second and third year beans in 1957, so there may be a swing away from beans in 1958.

Early **reports of germination of 1957-crop soybean seed are mostly very good,** much above average, except for some southern areas where extremely low germination is reported.

A total of 3 million bushels of soybeans was scheduled to load out of the Port of New Orleans for export shipment in the period Dec. 23-Jan. 5 as of Dec. 26, according to W. L. Richeson & Sons, Inc., Port export brokers.

	Cash prices Dec. 27
Soybeans, No. 1 yellow, Chicago, bu.	$ 2.22½
Soybean oil meal, Decatur, ton	43.50
Soybean oil, crude, Decatur, lb.	.11¼

	Cash price to farmers for No. 1 soybeans Dec. 27	Price for No. 2 soybeans Dec. 27	Retail cash price for bagged soybean oil meal Dec. 27
Ark.		$2.05	
Ill.	$2.04 @ $2.14	2.05 @ $2.11	$56@$76
Ind.	2.00 @ 2.07		62
Iowa	1.98 @ 2.00		66
Minn.	1.92 @ 2.06	1.89	70@ 76
Miss.		2.04	
Mo.	2.02 @ 2.05	2.00	64
N. C.	2.00	2.00	
N. Dak.	1.87	1.82	
Ohio	2.12		
Tenn.	2.05 @ 2.10		60
Va.		2.05	
Ontario	1.90	1.86	77



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AUTHOR at the U. S. exhibit at the Verona, Italy, fair last year where he was a technical consultant. Dr. Hayward thinks we should do a real selling job abroad for soybean oil meal.

Soybean Oil Meal in Livestock and Poultry Feeds

I. A WORLD TRAVELER'S VIEWPOINT

The two articles following are from speeches of Dr. Hayward and Dr. Hanson before the American Soybean Association in Minneapolis

By J. W. HAYWARD
Director of Nutrition, Archer-Daniels-Midland Co.

DURING THE past couple of years I have had the privilege of visiting in several foreign countries with men engaged in the feed business in one way or another, such as ingredient importers and brokers, feed manufacturers, feed trade association staff members, university and college professors, animal and poultry research investigators, representatives of the USA and foreign government agricultural staffs, and farmers. Mind you, these were all business trips made in the interest of feed ingredients — usually soybean oil meal. I imagine these few trips abroad prompted your program chairman to label me "A World Traveler." That label is exaggerated. However, I did enjoy these trips.

My last trip to Europe was by invitation of the Soybean Council of America, to represent our soybean industry on soybean oil meal at the International Agricultural Trade Fair in Verona, Italy. Several statements made in this digest of my address before the 37th annual meeting of the American Soybean Association in Minneapolis Aug. 28, 1957, will reflect some of the experiences gained from these trips abroad.

Our domestic production of soybeans from this 1957 crop is estimated at some 491 million bushels, which is in contrast to some 40 million bushels 20 years ago. The U. S. production of soybean oil meal has increased over the past 20 years more than 7 million tons, the 1957-58 estimate being 7.8 million tons.

Our current annual production of all protein concentrates, other than soya, is only some 6½ million tons. This production of non-soya protein is only about 900,000 tons greater than it was 20 years ago (Table 1). The increase in soya has made possible a steady rise in production over the past several years of manufactured feeds, as well as made possible a significant increase in animal units, especially poultry and hogs.

Our soybean production is currently some 42% of the world's supply of soybeans. U. S. soybeans make up some 14% of the world's production of all oilseeds (Table 2). About 74% of our annual production of soybeans is converted by processors into oil and meal. Manufactured feed is the market for over 90% of our soybean oil meal consumed in the states (Table 3).

Table 1. Comparison of soybean oil meal with all other protein concentrates, U. S. A. production—crop years (1,000 tons)

Date	SBOM	Other	Total	% SBOM
1930-40	483	5,714	6,197	13
1940-50	3,420	6,292	9,712	28
1956-57	7,600	6,600	14,400	54
(Est) 1957-58	7,800			

Ref.: Soybean Bluebook AFMA Release.

Table 2. World production of protein crops 1954-55 (1,000 metric tons)

Crops	Europe (Excluding USSR)	Oceania	North and Central Americas	South America	Asia	Africa	World total (Excluding USSR)
Soybeans	....	....	9,430	113	9,900	15	19,500
Peanuts	30	18	570	360	6,900	2,700	10,600
Cottonseed	230	1	5,990	1,330	4,700	1,400	13,700
Linseed	240	10	1,380	510	460	90	2,690
Rapeseed	500	....	25	.....	4,400	20	4,900
Sesameseed	13	....	70	70	1,450	200	1,800
Sunflower	....	....	.....	420	120	70	1,450
Copra	....	250	110	30	2,340	120	2,850
Palmkernals	....	....	55	55	58	830	1,000
							58,490,000

Ref.: 1955 Yearbook of Food & Agriculture Statistics, published by the Food and Agriculture Organization of the United Nations in Rome.

Table 3. U. S. use of soybeans 1955-56

		% of Total
Bushels produced	373,500,000	
Total disappearance (bushels)	379,700,000	
Bushels exported	67,200,000	17.7
Bushels for seed	26,900,000	7.1
Bushels fed	2,500,000	.6
Bushels crushed	283,100,000	74.0
Tons SBOM used in feeds	6,167,000	90.0
Tons SBOM for other* purposes	627,400	10.0

* Fed as soybean oil meal and for human and industrial use.

Ref.: 1957 Commodity Year book, Commodity Res. Bureau, Inc., N. Y.

Our soybean industry would never have expanded as it has if it had not been for the need for and acceptance of soybean oil meal in feeds for livestock and poultry. The feed manufacturer, more than any other processor group of feed materials, has stressed the need for balanced rations. The general acceptance of soybean oil meal in critical rations for poultry and swine has resulted largely from the painstaking work of many nutritional investigators at our state and federal research centers, as well as several investigators engaged in industrial research.

To properly process soybean oil meal for optimum protein efficiency of critical animals, especially young poultry and hogs, demands exacting procedures and actual feeding test controls. There should be no guesswork about this. It must be the responsibility of each processor to see that his meal is prepared properly (Table 4).

Table 4. Essential steps in processing soybean oil meal

Step No. 1—Plant production test runs.
Step No. 2—Test feeding of experimental meals.
Step No. 3—Plant duplication of best meal in feeding test.
Step No. 4—Daily policing of plant production by chemical and physical tests.
Step No. 5—More test feeding of experimental meals at regular intervals.

My observations are that, as a whole, U. S. soybean oil meal is more uniform in composition and better standardized in nutritional quality than any other protein concentrate produced outside of the U.S.A., and in most instances our soya is a better product as to uniformity and standardization than other protein concentrates produced in the States (Table 5).

Table 5. Value of protein fed to chicks

Protein supplement added to cereal basal	Gross protein value
Milk casein	100
SBOM (46% prot.)	85
Meat meal (55% prot.)	33
25% MM + 75% SBOM	60
40% MM + 60% SBOM	58

Ref.: Gross values of combinations of SBOM with Pilchard fish meal and meat meal by C. I. Draper and M. Rhian. U. S. Egg & Poultry Mag. 48: (8)466. August 1942.

There has been some exactness practiced in processing, and in source of raw materials, for a few protein concentrates produced in the States but we do not find that this is true, as a rule, for any countries outside of the U.S.A. (Table 6).

Table 6. Effect of processing on nutritive value of herring meal

	Chicks avg. wt. Gms		Relative nutritional value
Low temp. Meal A	217	A	100
Commercial Meal A	163	A	75
Low temp. Meal B	210	B	97
Commercial Meal B	155	B	71

Ref.: Effect of Drying Temperature on the Folic Acid Content of Herring Meal. By J. Biely, et. al. Univ. of British Columbia. Science 116:249 (1952).

The importance of soybean oil meal in some of our critical feeds is illustrated in Table 7 and 8. I used Table 7 to illustrate the ABC's of formulating a 22% broiler starter. It is seen that ground yellow corn and 50% protein dehulled soybean oil meal make up some 90% of this basic formula. To make a practical and effective 22% broiler starter is not nearly as simple as it would appear to the layman after he studies this outline.

To formulate a well-balanced broiler starter requires some reduction of the soya and dehydrated alfalfa meal to make room for needed sources of growth factors and one or two ingredients to boost protein quality. The corn or grain may need to be lowered some also to accommodate added stabilized fat or the inclusion of desired grain by-products. Then too, there is the matter of adding correct levels of sufficient vitamins, minerals (including trace minerals), and stabilized fat for more energy, one or more antibiotics and a good coccidiostat if the starter is to be medicated for prevention of coccidiosis.

You get some idea of how complicated a practical broiler starter is by observing the list of some 33 ingredients in Table 8. Still, with all of these additions to my basic formula (Table 7), a good broiler starter, with its productive energy of over 1,000 calories per pound, the 50% soybean oil meal may be up to 25% or better and the corn-soya combination at some 85% weight of the total feed mixture.

(Continued on Page 16)

Table 7. Basic ingredients of a 22% broiler starter

	%
Corn (ground yellow)	59.7
SBOM 50%	32.0
Dehydrated alfalfa meal	5.0
Minerals (including trace minerals)	3.0
Vitamins, antibiotics, arsenicals, medication, etc.	0.3
	100.0

Table 8. Ingredients used in a typical modern broiler starter

Dehulled SBOM, yellow corn, corn gluten meal, animal fat with BHA, fish meal, condensed fish solubles, dehydrated alfalfa meal, wheat germ meal, dried whey, antibiotic, arsenical, vitamin B^{12}, riboflavin, vitamin E, choline, niacin, pantothenic acid, vitamin K, vitamin D, vitamin A, BHT, phosphorus, calcium, salt, manganese, iron, copper, iodine, zinc, coccidiostat, and methionine.

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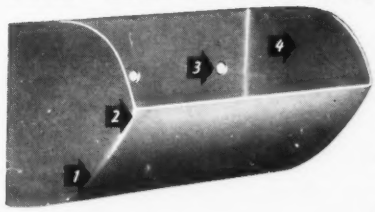

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Table 9. Animal nutrition research council broiler ration

	%
Corn	60.7
SBOM, 50%	28.0
Dried whey	2.5
Cond. fish solubles	2.5
Dehydrated alfalfa meal	2.0
Iodized salt	0.5
Choline chloride	0.05
Methionine	0.05
Ground limestone	1.6
Dicalcium phosphate	1.75
Trace mineral mix	0.1
Vitamin A stabilized	0.2
Vitamin D	0.05
Arsanilic acid suppl. plus additional vitamin mixture as listed	0.05

Ref.: Feed Age, March 1955.

Table 9 gives the formula for a broiler ration which was released as a test diet by the Animal Nutrition Research Council. Details of this ration can be found in the March 1955 issue of Feed Age. This ration contains 28% of 50% dehulled soybean oil meal and a corn-soya combination of 83.7%.

In 28% protein turkey starters, the soybean oil meal may exceed 35%, with the grain level at 50% or better. Pig starters and growers usually employ considerable soybean oil meal also. These starters are all very critical feeds as to needs for protein of high quality. Hence, you can see the importance of soybean oil meal in many feeds as to amount required and as to the need for a soya which has been cooked under controlled conditions for optimum protein nutrition of livestock and poultry having critical requirements for protein.

U. S. soybean oil meal, as a whole, is the best of its kind in the world. Many foreign countries are definitely in need of our soya for use in formulating adequate feeds for their productive animals, especially poultry, calves and swine. My travels have proved to me very convincingly that there is a dire need for high quality protein for *animals* and *humans* in most foreign countries. Soya protein from the U.S.A., as 50% meal or as edible soy flour, is the answer.

We are producing a surplus of soybean oil meal here in the States for the best interest of the soybean grower and processor. This is all based on the premise that government price supports will continue. If the production of soybeans continues at recent rates, we are now geared to increase the production of soybean oil meal in the future at a much faster pace than the experts estimate our population will increase.

I think we should do a real selling job abroad to create a preference for our high-quality soybean oil meal. I would confine our efforts entirely to 50% dehulled soybean oil meal. At such distances this dehulled meal is significantly cheaper per unit of protein than a full fiber meal. It looks like we should try to export about 1 million tons of our soybean oil meal during the crop year 1957-58, and increase that to some 2 million tons within the next several years if soybean production continues to increase at its present rate. Don't forget that soy flour has a definite place, also, in the food picture abroad.

Exports to Japan Down

EXPORTS of U. S. soybeans to Japan in the January-August 1957 period were down a little from the like period in 1956, 392,000 metric tons in 1957 as compared with 419,000 metric tons in 1956, according to Foreign Agricultural Service.

Shipments of soybeans from Communist China for the first 8 months of 1957 were roughly the same as for the same period in 1956, 156,000 metric tons for 1957 as compared with 161,000 metric tons in 1956.

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One of Professor Hanson's projects attracted nationwide attention in 1953, when he conceived the idea for a dramatic demonstration. He placed one set of littermate barrows on a ration typical of 1910, a second on a ration common in 1930, and a third on a well-balanced modern ration. The three groups were started on the different rations just after weaning. By the time the experiment was only a few weeks old, it was apparent that the pigs fed the modern 1953 ration were far ahead of the others, both in rate of gain and total weight. The 1953-fed pigs were, of course, much healthier-appearing than their less fortunate brothers. The pigs fed the 1910 and 1930 rations also took more feed per pound of gain and their final weight was a good many pounds under the 1953-fed pigs. See picture above.

II. A RESEARCHER'S VIEWPOINT

By L. E. HANSON
University of Minnesota

ACCORDING to the records, the first soybean oil meal manufactured in the United States was made by expeller processing in 1915. The industry grew slowly and prior to 1930 less than 50,000 tons of soybean oil meal was produced annually. During the 1930-40 decade average production increased to 482,000 tons. This was a sizeable increase but yet represented only a modest proportion of our high-protein feed supply. In the same decade cottonseed oil meal production averaged 1,951,000 tons and dried milk products 1,616,000 tons. The latter were then, and had been for many years, the most important high-protein feeds in terms of tonnage.

During the decade of the 40's cottonseed meal and dried milk products production continued at a fairly steady rate to 1943 followed by a downward trend in tonnage, a reduction which had reached 500,000 tons for cottonseed meal and 200,000 tons for dried milk by 1947. On the other hand soybean oil meal production continued to increase and by 1942 was slightly in excess of either cottonseed meal or dried milk. By 1944 the tonnage of soybean oil meal produced was greater than the combined production of cottonseed meal and dried milk by products.

Soybean production and hence soybean oil meal production have increased in all but a few years up to the present time. Thus average annual soybean meal production from 1940-50 was nearly 3.5 million tons, in 1955-56 about 6 million tons and the estimate for 1956-57 was 7.8 million tons. According to the USDA, soybean oil meal consumption represented 11% of the total consumption of the five major oil seed meals (soybean, cottonseed, linseed, peanut and copra) during the period 1931-35. In 1956-57 soybean oil meal was 70% of the total.

War and government agricultural policies have been important factors in the growth of the soybean industry. However it appears that the feed manufacturing industry has also been an important factor. Most of us can remember when the feed manufacturing industry was a relatively small part of the nation's business. Yet by 1955 feed manufacturing ranked ninth among all industries in the United States. How did it get so large?

Relatively favorable farm prices during World War II and limited availability of high-protein feeds encouraged many farmers to try manufactured feed, probably for the first time. Nutritional studies with corn-soybean meal rations which started in the 30's resulted in the isolation and identification (1948) and subsequent commercial production of the "animal protein factor," vitamin B-12. This discovery was of the utmost importance because it was the solution of the principal problem concerning the use of soybean oil meal as the major or only source of supplementary protein to a corn ration for poultry or swine. Subsequent discovery of the value of antibiotics in livestock rations and a large number of other feed additives also were factors in the growth of the feed industry. The nutritional discoveries and other developments made possible a production revolution in the poultry business which stimulated further the growth of the feed manufacturing industry.

One may well ponder the question, how big would the feed industry be today without the tremendous in-

crease in soybean production? Or conversely, would the increase in soybean production have been economically feasible without an efficient feed manufacturing industry available to utilize the continually expanding supplies of soybean oil meal? It appears to me that this has been and is today a situation of mutual benefit to the soybean growers and processors and their best customer, the feed manufacturer. The overall effect has been one of greatly improved nutrition of livestock and poultry, with subsequent benefit to the entire nation.

TABLE 1. SUPPLEMENTS FED, 1956-57

Kind of supplement	Mixed	Soybean meal
Approximate protein content, %	36	38
Ingredients, lbs.		
Soybean oil meal (44%)	38.6	85.5
Tankage (dry rendered, 60%)	20.0	.....
Linseed oil meal (36%)	10.0	.....
Alfalfa meal (dehy.-greased, 17%)	20.0	.....
Ground limestone	2.0	3.0
Steamed bone meal	6.0	8.0
Trace mineral (high zinc)	0.2	0.2
Salt, plain	2.5	2.5
Vitamin B-12 supplement[1]	0.3	0.3
B-complex supplement[2]	0.3	0.3
Irradiated yeast[3]	0.1	0.1
Vitamin A supplement[4]	.....	0.1

[1] Added 60 mg. B-12 ton; [2] added 12 grams riboflavin, 24 grams pantothenic acid and 54 grams niacin/ton; [3] added 400,000 I. U. vitamin D/ton; [4] added 900,000 I. U. vitamin A/ton.

TABLE 2. GAINS AND FEED EFFICIENCY OF PIGS FED MIXED SUPPLEMENT OR SOYBEAN OIL MEAL SUPPLEMENT

Supplement fed		Mixed		Soybean meal		
Experiment	Lot	Av. daily gain, lb.	Feed/100 lbs. gain, lb.	Lot	Av. daily gain, lb.	Feed/100 lbs. gain, lb.
I(Summer)	1	1.56	365	8	1.69	359
	3	1.77	342	7	1.71	353
	2	1.65	351	6	1.80	337
	Average	1.66	353		1.73	350
II (Fall and Winter)	1	1.48	386	8	1.76	350
	3	1.59	358	7	1.69	333
	2	1.57	360	6	1.67	321
	Average	1.55	368		1.71	335
Av. Both Exp.		1.60	360		1.72	342

How good is soybean oil meal?

To answer this question in part we would like to cite the results of a swine experiment. Time will not permit a discussion of poultry and other livestock. For the past 6 years the Minnesota Station has used a mixed supplement composed of soybean oil meal, tankage, linseed oil meal, dehydrated alfalfa meal, minerals and vitamins, as a basal mixture for various studies in swine nutrition. This mixture was designed partly on the basis of general availability of ingredients and partly on the basis of other considerations. For example, tankage was used in part because it is a byproduct of the livestock industry. Linseed oil meal was used in part because Minnesota is an important flax producing state.

This mixture has produced excellent results when used to balance a corn ration. To date the best record made with this formula has been a 210 pound pig at 126 days of age. This mixture, plus antibiotics, was fed with corn and labelled the "Modern Ration" in the feeding demonstration conducted at Minnesota in 1953.

This past year an experiment was conducted at Minnesota to test the safety and efficacy of arsanilic acid when it is added to supplements intended for free-choice feeding. For this purpose two supplement mixtures were used, a mixed supplement such as described above and a soybean oil meal supplement. The formulas for these are given in Table 1.

Two supplements were used because it was believed that this would provide a better answer regarding the safety of the additive. It made possible also a direct comparison of the two types of supplements. Six 8-to-10-week-old pigs were fed per lot in each two experiments. Three levels of arsanilic acid were fed. Thus there were six direct comparisons of the two kinds of supplement. Each supplement was fed free-choice with ground shelled corn.

The feedlot data for the two experiments are summarized in Table 2.

The pigs in lots 2, 3, 6 and 7 were fed arsanilic acid. Lots 1 and 8 served as controls. In experiment I there was little difference in average gains or in efficiency of feed utilization between the pigs fed the mixed supplement and those fed the soybean meal supplement. The small difference was in favor of the soybean meal mixture. In experiment II there was a greater difference between the supplements and it was in favor of the soybean meal supplement. One pig in lot 1 in experiment II developed parakeratosis, but his

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TABLE 3. PERCENT OF PROTEIN IN RATION CONSUMED

Supplement fed	Mixed			Soybean meal		
Feeding period	Lot	From start to 125 lbs.	From 125 to 200 lbs.	Lot	From start to 125 lbs.	From 125 to 200 lbs.
Exp. I	1	12.4	11.2	8	15.6	13.4
	3	12.4	11.0	7	13.2	11.8
	2	12.1	10.9	6	12.7	12.2
			Entire feeding period			
	1	11.8		8	14.3	
	3	11.6		7	12.4	
	2	11.4		6	12.4	
Exp. II	1	14.8	11.3	8	13.5	11.4
	3	13.0	12.3	7	13.5	11.2
	2	13.5	11.2	6	13.6	11.3
			Entire feeding period			
	1	13.0		8	12.4	
	3	12.6		7	12.2	
	2	12.7		6	12.4	

reduced growth rate accounts for only a small part of the difference observed. The fiber content of all rations consumed was low, even for those pigs fed the mixed supplement. Since both supplements were well fortified with the known vitamins, it seems unlikely that the differences observed were associated with vitamin levels. Both formulas presumably were adequate also in the known minerals.

The most plausible explanation for the differences noted lies in the protein portion of the rations as consumed. Both supplements were consumed in moderate quantities and all lots of pigs balanced their rations very well. The protein level of the rations consumed, calculated from the amount of corn and supplement consumed, is given for each lot in Table 3.

If these data are compared with the growth and feed efficiency data given in Table 2 it will be noted that there is no consistent relationship between the levels of protein consumed and the performance of the pigs. In experiment I the pigs fed the soybean oil meal supplement ate slightly higher levels of protein than those fed the mixed supplement. In experiment II the reverse situation occurred. It should be noted too that the levels of protein consumed are below those recommended by some research workers.

Since corn protein is deficient in lysine, tryptophan and methionine, and soybean oil meal is considered to be a marginal source of methionine the content of these amino acids, in the rations consumed, was calculated. These calculations are given in Table 4.

In calculating the percent of sulfur containing amino acids in the protein of each ration mixture consumed methionine and cystine were added together. This was done on the assumption that approximately one-half of the methionine requirement can be met by cystine.

It should be kept in mind that amino acid requirements have been determined with young pigs under 100 pounds in weight. The data given in Table 3 show that the pigs consumed higher proportions of supplement during the first half of the experiments. Therefore the apparent deficiency of lysine, as indicated in Table 4, is probably not a real deficiency in the soybean meal supplemented ration. However, the mixed supplement ration appears to be deficient in lysine. This is due to the inclusion of linseed oil meal and alfalfa meal in this supplement. According to the published values, these feeds contain less than one-half as much lysine as soybean oil meal. These ingredients constituted 30% of the mixed supplement. The calculated values indicate that both ration mixtures contained adequate quantities of methionine-cystine and tryptophan.

These data show that high quality soybean oil meal alone may be superior to a mixture of high protein feeds in correcting the amino acid deficiencies of corn protein for swine.

A series of nitrogen metabolism studies at the Nebraska Station also attest to the high supplementary value of soybean oil meal protein. In one report Meade states (J. An. Sci. 15:288, 1956): "The supplementation of a 15.9% protein crude protein diet formulated from a 10.8% protein corn and a high quality soybean oil meal with either d-l tryptophan, d-l methionine or l-lysine failed to improve N retention of growing pigs when the supplemented diets were fed at approximately 4.25% of body weight."

TABLE 4. CALCULATED[1] AMINO ACID CONTENT OF RATIONS CONSUMED

Amino acids in ration	Lysine %	Methionine %	Cystine %	Tryptophan %
Soybean meal supplement[2]				
Corn 86.3 lbs.	.181	.190	.095	.060
Supp. 13.7 lbs.	.340	.072	.072	.072
% in ration	.521	.262	.167	.132
% in protein (12.7)[2]	4.1	3.4	.....	1.04
Mixed supplement[2]				
Corn 87.3 lbs.	.183	.192	.096	.061
Supp. 12.7 lbs.	.279	.064	.043	.060
% in ration	.462	.256	.139	.121
% in protein (12.2)[2]	3.8	3.2	.....	1.00
Required, as % of protein[3]	4.2	2.86		.82

[1] Calculated on the basis of values given in Feeds and Feeding, 22nd edition, Morrison Publishing Co., 1956, and National Research Council Pub. No. 295, 1953. [2] The proportion of corn and supplement consumed and the protein content of each mixture (12.7% and 12.2%) is the average of all lots for the entire feeding period for both experiments. [3] From Cunha, Swine Feeding and Nutrition, Interscience Pub., 1957.

Summary

Soybean oil meal production, since its infancy of 40 years ago, has increased at a fantastic rate, particularly during the last 10-15 years. Today soybean oil meal accounts for more than half of our total high protein feed supply.

The feed manufacturing industry has grown along with the soybean industry, as its best customer for soybean meal, with mutual benefit to both industries. The overall effect has been one of greatly improved nutrition of livestock and poultry.

Although soybean oil meal contains many nutrients its principal value lies in its high protein content of high biological value.

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But they're not, actually. Because just about every one of those places there on your map represents *people*—lots and lots of them. And the number of people is increasing—almost every *second* of every day! There are more children being born now then ever before. And the population experts are predicting an increase for this country of over 50 million people by 1975—and a world increase of over 800 million by the year 1999!

Makes you wonder how there will be enough food, homes and clothing to take care of all those extra people, doesn't it?

Well, for one thing, the crops and animals you're helping your Mom and Dad raise now are already serving a lot of people in a lot of different ways. And in the future your farm will be many, many times more important to this country and to the whole world.

More people and more industries will be wanting farm products. And that means the challenge to farmers when you're grown up will be greater than ever in history.

But ask yourself: where else could there be such unlimited opportunity for the man who has prepared himself to keep in step with progress?

So you see, son, your farm and its crops and animals are a mighty close and important link between you and all those places on your map. They just won't ever be able to exist without you.

Think about the farm. It has a great future. So have you.

* * * * *

Yes, we at Cargill have a lot of faith in this boy, and the thousands of farm boys like him.

In our 93 years as a Creative Processor of farm products, we've seen a great many farm youngsters grow up, then watched their sons—and then *theirs*—stay with the land.

This particular boy may seem like any other. And in most ways, he is. But somehow, we feel he's a little *extra* special.

He already knows many of the secrets of running a farm successfully. When he is graduated from high school, he'll have had ten years of practical working experience behind him. To us, that makes today's farm boy one of tomorrow's most valuable assets to this country. He's the man to whom we at Cargill are looking to lead the farmer-processor team into a bright, new field of opportunity.

93 Years of
Creative Processing
of Farm Products

CARGILL

THE SOYBEAN

Miracle crop of the twentieth century

A SOYBEAN DIGEST EXTRA

This is the soybean, whose value in 25 years has grown a hundred-fold from a 10-million-dollar crop to the billion dollar class. It is now our fifth most important cash crop. It provides more than twice the cash income to farmers of the so-called basic crops (rice and peanuts combined).

Watch its growth!

OUT OF oriental antiquity to occidental modernity and toward an even greater tomorrow winds the long trail of the soybean.

As far back as 2838 B.C., Chinese Emperor Shen Nung described over 300 medical remedies from this Golden Bean. The history of the soybean is replete with stories of the transportation of soybean seed from the Orient to the United States for use as a legume in the 19th century. However, the soybean is truly a 20th century crop for the production of high quality vegetable oil and protein meal.

Domestically produced soybeans were first processed for oil and protein meal in 1915 at a cottonseed mill in Elizabeth City, N. C. By 1924 the soybean had moved onto the fertile plains of the Midwest. Production approximated 5 million bushels. A new industry was alive . . . destined to expand to a major crop within a single generation . . . founded and nurtured by the rich soil of America and by the American genius for teamwork displayed by agronomists, farmers, processors and users. Capital to the tune of millions of dollars was invested. The farm organizations and universities were enlisted. Out of this generous outpouring of the genius and resources came a new giant.

The speed with which the soybean and its two major products, the oil and the protein rich meal, have established their place is unequalled by any agricultural commodity.

The charts on the next two pages show:

1—The rapidity with which soybean production and value have expanded in the United States, and

2—The rapidity with which soybean oil and meal have taken a permanent and expanding position in the American market place.

Note that the increase in total food fats consumed in the United States since 1931-35 is approximately equal to the increase in soybean oil consumed. Also, of the approximately 7-million-ton increase in U. S. utilization of protein meal, about 85% was represented by soybean oil meal.

These, then, are pertinent questions:

- What would the vegetable oil industry of the United States be like today without the abundant supplies of soybean oil?
- What would the mixed feed industry be like today without soybean oil meal?
- More important, what would be the effect on the American consumer? He who enjoys the highest standard of living in the world? He who enjoys the fruits of soybean oil production in the form of shortening, margarine, salad oils, in paints and other industrial products, and of soybean oil meal production in the form of milk, butter, eggs, chicken, pork and beef?

THE MEANING

To America—The soybean has meant:

Strength, not only in peacetime, but also in two wars. It shifted the United States from dependence on imports to the largest exporter of fats and oils in all the world. The phenomenal rise of the United States as an exporter is the most significant postwar development in the field of fats, oils and oilseeds. For this, give major credit to the soybean.

To the American Farmer—The soybean has meant:

By 1956, a billion-dollar annual cash income.

A profitable market for the output of more than 20 million acres of cropland, without government controls.

SOYBEAN OIL VS. TOTAL FOOD FAT CONSUMPTION

Period Average	Total Food Fats Consumed	Total Soybean Oil Consumed	Percent of Total	SOYBEAN OIL CONSUMED IN FOOD USE								
				Margarine			Shortening			Other Edible		
				Total Fats & Oils	Soybean Oil	Percent	Total Fats & Oils	Soybean Oil	Percent	Total Fats & Oils	Soybean Oil	Percent
	million lb.		%	million lb.		%	million lb.		%	million lb.		%
1931-35	5,498	27	0.49	217	1	0.46	1,183	14	1	667	12	2
1936-40	5,961	276	5	293	49	17	1,468	151	10	883	76	9
1941-45	5,976	849	14	424	165	39	1,406	485	34	963	199	21
1946-50	6,247	1,256	20	655	251	38	1,493	742	50	1,086	264	24
1951-55	7,065	1,967	28	1,025	652	64	1,731	867	50	1,431	448	31
1955	7,522	2,260	30	1,075	746	69	1,988	930	47	1,661	584	35

Ability to divert acreage from chronic surplus crops.

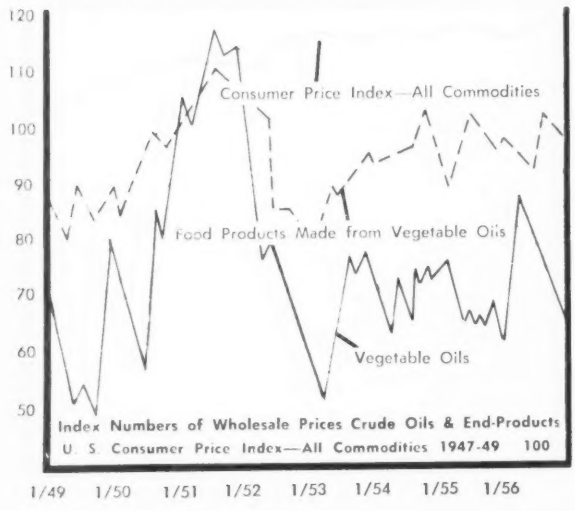
Availability of high protein meal to feed poultry and livestock more efficiently and more economically.

To the American Consumer—The soybean has meant:

Freedom from reliance on uncertain import supplies to meet oil and fat needs.

Abundant supplies at most reasonable prices of a most important healthful, high energy food —soybean oil. The next chart demonstrates the relative cheapness of edible oils—for many years 25% to 30% *below* the general level of consumer prices.

VEGETABLE OILS 1949 - 1956



More abundant supplies and lower prices for meat, dairy and poultry products through more efficient feeding made possible by soybean oil meal.

To Labor—The soybean has meant:

Millions of man hours of work—at good wages—in processing plants, elevators, shipping, mixed feed plants, farm machinery manufacture.

Opportunities for advancement in an expanding industry.

THE GROWERS

WITHIN THE United States soybeans are produced primarily in the Midwest. About 90% of the crop is grown in the six states of Illinois, Minnesota, Iowa, Indiana, Ohio and Missouri. In most of these states soybeans are the *second* most important cash crop. The accompanying maps show the economic importance of soybeans by states.

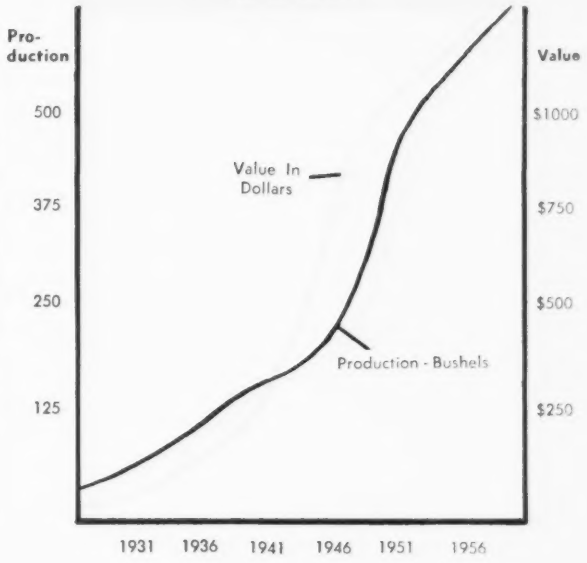
SOYBEAN MEAL VS. TOTAL PROTEIN MEAL CONSUMPTION

AVERAGE	Total Protein Meal (1)	Total Soybean Meal	Percent of Total
	Thous. Tons		
1931-35	2,253	245	11
1936-40	3,600	1,008	28
1941-45	5,801	3,093	53
1946-50	7,184	4,304	60
1951-55 (2)	8,890	5,520	62
1955 (2)	9,200	6,050	66

(1) Total consumption for feed of 5 major oilseed meals.

(2) Preliminary, partly estimated.

SOYBEAN PRODUCTION AND VALUE (MILLIONS)



The price farmers receive for soybeans is of vital importance to the entire economy of the great Midwest. Each 1¢ change in the price of oil is equivalent to 11¢ per bushel of soybeans. With the 491-million-bushel 1957 crop, a penny-per-pound oil price change means about *$60 million change in farm income.*

The growers' market is threefold:

1—The domestic processor who buys and crushes 75% or more of the annual production.

2—The exporter who buys and ships about 17% of the crop to meet import requirements around the world. Japan, Canada, Holland and West Germany are the largest buyers abroad.

3—The seed use for planting requires some 7%.

Naturally, the producer is interested in every phase of this highly competitive market. He is vitally interested in the export market, not only for soybeans but also for soybean oil and meal. He knows that as the price of soybean products rises or falls, the bid for soybeans promptly moves in the same direction.

The producer is also concerned with the research work going on in both public and private agencies. New higher yielding varieties, new outlets, new uses are all price and income factors.

THE PROCESSOR

THE LARGEST present and potential market for the soybean crop is in the form of soybean oil and meal. The function of the processor is to convert soybeans into useful products, mainly soybean oil and soybean oil meal. With modern equipment a bushel of soybeans produces about 11 pounds of crude soybean oil and 47 pounds of meal. The meal is returned to the farm, usually via the mixed feed industry, while the oil is sold elsewhere for many purposes.

The expansion and improvement of the domestic processing industry has matched the phenomenal growth of the soybean crop. Processing, too, has changed in the short span of years since the beginning of commercial soybean production in the United States. First the old hydraulic presses were replaced by mechanical screw presses. Later the screw presses were replaced by solvent extraction. Today the domestic processing industry is near 100% solvent extraction—the most modern equipment available. Each change and improvement has resulted in increased efficiency—more oil per bushel. And more value per bushel—higher prices to farmers.

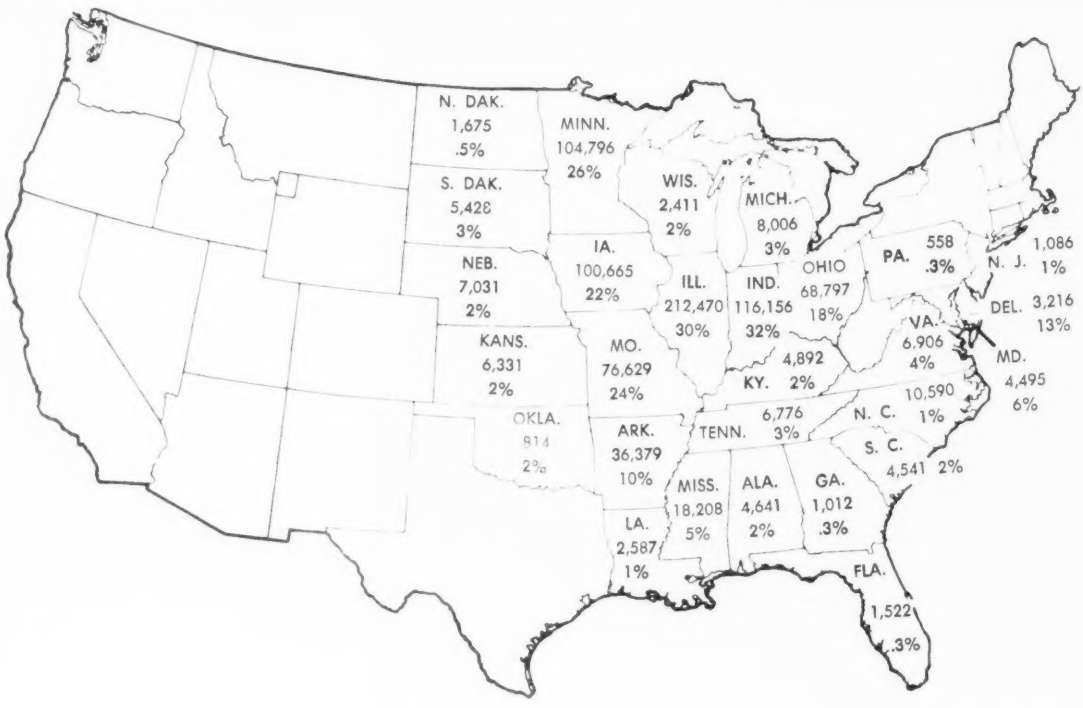
Capital investment in soybean processing plants is estimated at near $500 million—more than $1 for each bushel processed.

The table on page 7A shows the growth and improved efficiency of the domestic soybean processing industry from 1940 through 1955.

Soybean processing is highly competitive. Day by day even the smallest price fluctuations in meal and oil are immediately reflected in soybean prices.

Soybean prices are naturally related to the oil and meal outturns and prices. Soybean oil and meal must be sold for domestic and export use in competition with other fats and oils and with other feeds, and even synthetic products

Cash receipts from sales of soybeans (thousands of dollars) - % of income from sales of crops represented by soybeans (1955)



Relative importance as a source of cash income among crops in the state (1955)

A modern soybean processing plant. Expansion of the processing industry has matched the crop's growth.

SOYBEANS: 1940 THROUGH 1956

Year	Production 1,000 bu.	Soybeans crushed 1,000 bu.	Soybean oil produced 1,000 lbs.	Oil outturn per bu. pounds
1940	78,045	64,056	564,417	8.8
1941	107,197	77,131	706,678	9.2
1942	187,524	133,453	1,206,186	9.0
1943	190,133	142,307	1,219,454	8.6
1944	191,958	153,402	1,346,704	8.8
1945	192,076	159,459	1,414,712	8.9
1946	201,275	170,247	1,531,096	9.0
1947	183,558	161,395	1,533,329	9.5
1948	223,006	183,665	1,806,854	9.8
1949	234,194	195,331	1,936,972	9.9
1950	299,249	251,990	2,453,553	9.7
1951	283,777	244,378	2,443,890	10.0
1952	298,839	234,308	2,535,229	10.8
1953	269,169	213,155	2,350,191	11.0
1954	341,075	249,009	2,711,494	10.9
1955	371,106	283,126	3,142,590	11.1
1956	455,869	315,941	3,431,329	10.9

such as urea. It is impossible to buy soybeans and sell all of the products on a spot, day-to-day basis. Soybeans are purchased largely during a few months following harvest and product sales are booked for future delivery.

Futures markets operate for soybeans and for soybean oil and meal. For the year ending June 30, 1956, futures trading in soybeans again led all other futures trading. The total volume was $14.7 billion.

The increase in processing efficiency and also of competition is well summarized by comparing wartime controlled operations with recent prices.

During the marketing year 1944-45 the average price received by farmers for soybeans under ceiling prices was $2.05 per bushel. The ceiling price, f.o.b. Decatur, Ill., for crude soybean oil in tankcars was 11.8¢ per pound and for bulk soybean meal, $45 per ton. The government then paid a subsidy averaging about 35¢ per bushel to maintain product prices while assuring soybean producers the government price support. In mid-October 1956 market prices for oil and meal were about the same—with soybean prices supported at $2.15 per bushel—and no government subsidy.

The principal channel of marketing from the producer to the processor is by way of a country elevator and one or more intermediate dealers. They perform the important service of assembling, storing and shipping to the processor or into export.

Since over half of the crop of soybeans is usually sold during the three months of October, November and December, there is a great need for hedging facilities. In 1936, in response to this need, a futures market for soybeans was provided in Chicago. This was followed by needed hedging facilities for soybean oil and meal in 1950 and 1951. These facilities have been of great help to all segments from producer to user.

THE EXPORT MARKET

THE PHENOMENAL rise of the United States as an exporter is perhaps the outstanding postwar development in fats, oils, and oilseeds. The soybean has changed the United States from a net importer of these products to the major net exporter.

U. S. exports of soybeans and soybean oil increased almost tenfold from 5.5 million bushels (bean equivalent basis) annual average in the 1935-39 period to an average of 54.2 million bushels in the 5-year period 1950-54. During this same period total world exports declined from 97.8 million bushels (bean equivalent) to 82.7 million bushels. In 1955-56 exports reached a record level of 116 million bushels (30% of the crop) of which about 65 million bushels were exported as beans.

Foreign production in 1956 is estimated at 398 million bushels, highest of the postwar years but 4% less than the prewar (1935-39) average. U. S. output in 1956 was officially estimated at 456 million bushels or about nine times as large as prewar. China-Manchuria is the most important foreign production source. Output in this area in 1956 was estimated at 340 million bushels, less than the prewar average of 359 million bushels. The United States and China-Manchuria account for more than 93% of world production.

Postwar exports from China-Manchuria to free world markets, however, have been markedly smaller than in earlier years. Rising world demands due to increasing populations and higher standards of living will continue to provide a growing market for U. S. production.

THE GOVERNMENT

THE ABILITY of the soybean to remain free of government acreage restrictions and other peacetime controls has been as remarkable as its rapid growth in the United States. Price support has been extended to soybeans. But it has generally been on a basis that provided adequate protection to producers and still enabled the products to expand existing markets and to seek out new markets at home and abroad.

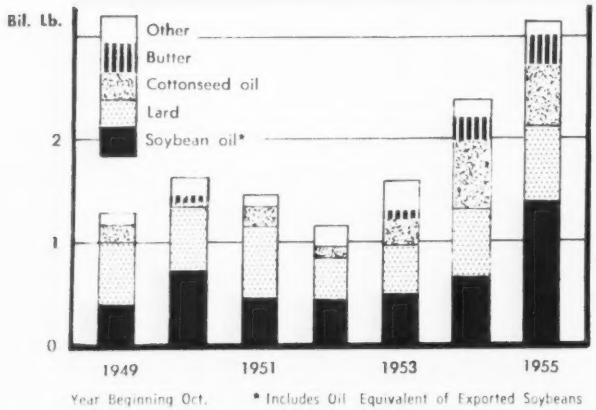
The 1955 soybean crop set a new record production of 371 million bushels. Yet at the end of the marketing year, Oct. 1, 1956, total remaining stocks from that crop were only a few million bushels.

The year 1956 set another new record—456 million bushels! And this new record crop was also moved into consumption.

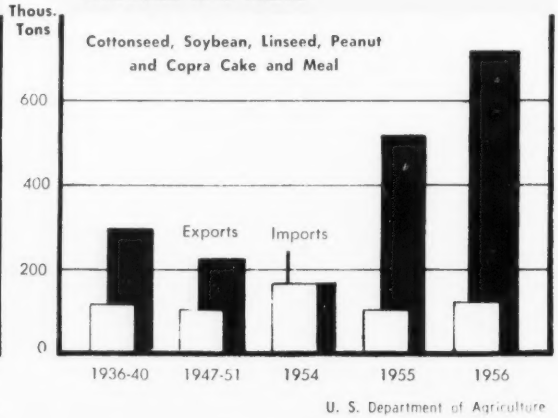
Soybean producers, processors and users have recognized the necessity for price support. But they have consistently favored reasonable support levels designed to encourage the movement of increasing production into consumption and not into government store houses. This statesmanlike approach has succeeded in keeping soybeans out of CCC inventories. Government policy has been designed to strengthen and stabilize markets. From a fiscal standpoint, unlike many crops that have had the full regalia of government controls wrapped around them with losses of hundreds of millions of dollars, the Commodity Credit Corp. actually made $4 million over the past 23 years in its soybean operations.

Thus, government and industry have concentrated efforts in the fields of research and marketing rather than toward restricted production coupled with high price support. Over the years higher yielding varieties have been developed adapted to an ever-widening area. This has meant much to producers forced to reduce acreage of other crops because of lost markets accented in most cases by high price support and control programs. Equally important, the fruits of research have improved the

U. S. EXPORTS OF FOOD FATS & OILS



U. S. EXPORTS AND IMPORTS OF OILCAKE AND MEAL



ability of soybeans to compete with other crops from the standpoint of dollar return per acre.

Relatively new farm legislation has been a most potent factor in solving a basic farm problem. Vast markets exist in friendly nations for American farm produce. But in many cases dollar exchange is not available.

The Agricultural Trade and Development Act of 1954 (Public Law 480) authorized programs for the sale of surplus agricultural commodities in exchange for foreign currencies. Under this authority surpluses can be sold abroad and moved entirely through commercial channels. Government's function is in the field of currency exchange. The Secretary of Agriculture determines the nations with whom agreements shall be negotiated and determines the commodities to be financed under P. L. 480. The foreign currencies engendered by the sale are used in various ways, many of which replace outright grants or expenditures for which dollar appropriations would otherwise be required.

The soybean is unique with regard to export markets.

The meal fraction from soybeans is needed domestically. In fact, it will require a further large increase in soybean production and processing to even approach the tonnage of protein meals needed for balanced livestock and poultry rations.

On the other hand, edible oil and fat per capita consumption in the United States remains constant. Total consumption expands only as population grows.

Importing countries have been buying soybeans primarily to the extent that they need both oil and protein meal. U. S. exports of soybeans are quite substantial and set another new record in 1956-57.

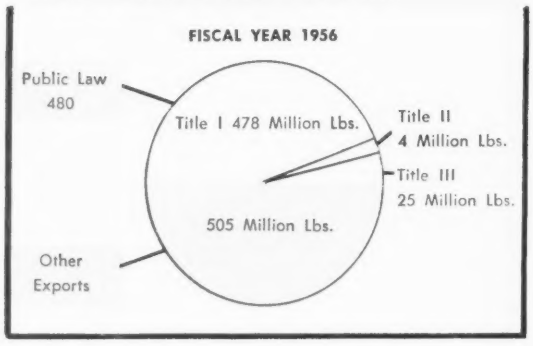
With a virtually unlimited meal market in the United States, the major consideration has been to dispose of surplus oil abroad to maintain prices to producers and to prevent the accumulation of soybean inventories in government hands.

This has been admirably accomplished by arranging for the export of relatively small quantities of edible oils and fats under P. L. 480. The resulting benefits have accrued not only to producers of soybeans, cottonseed and lard (hogs) but also to all other producers of U. S. oils and fats—flaxseed, tallow and grease (livestock) and marine oils.

In 1955-56, 263 million pounds of soybean oil

Scientist of U. S. Regional Soybean Laboratory with experimental soybeans in greenhouse at University of Illinois. Much new varietal research is still needed.

ONE HALF U. S. SOYBEAN AND COTTONSEED OILS EXPORTED UNDER P. L. 480



were exported under this program. This is the oil equivalent of about 24 million bushels of soybeans. Conservative government economists estimate that in the absence of this program the market price for soybeans would have been below the $2.04 support price instead of the $2.22-per-bushel average price received by farmers. An official Department of Agriculture report stated that during the 1955-56 and 1956-57 marketing years the *increase* in farm income from fats and oils as a result of P. L. 480 was $215 million.

Also, in the absence of this program, CCC would have acquired many millions of bushels of soybeans. In addition, the government likely would have acquired cottonseed with all the attendant difficulties of handling this perishable commodity.

Oil prices would no doubt have been much lower without this export demand generated by P. L. 480. Prices of protein meal to farmers would have been much higher because of lower supplies, higher per unit processing costs, and the basic fact that soybean prices can only reflect the total value of the products. With the same price for soybeans competition and interrelationships assure that meal prices move up as oil prices go down. And vice versa.

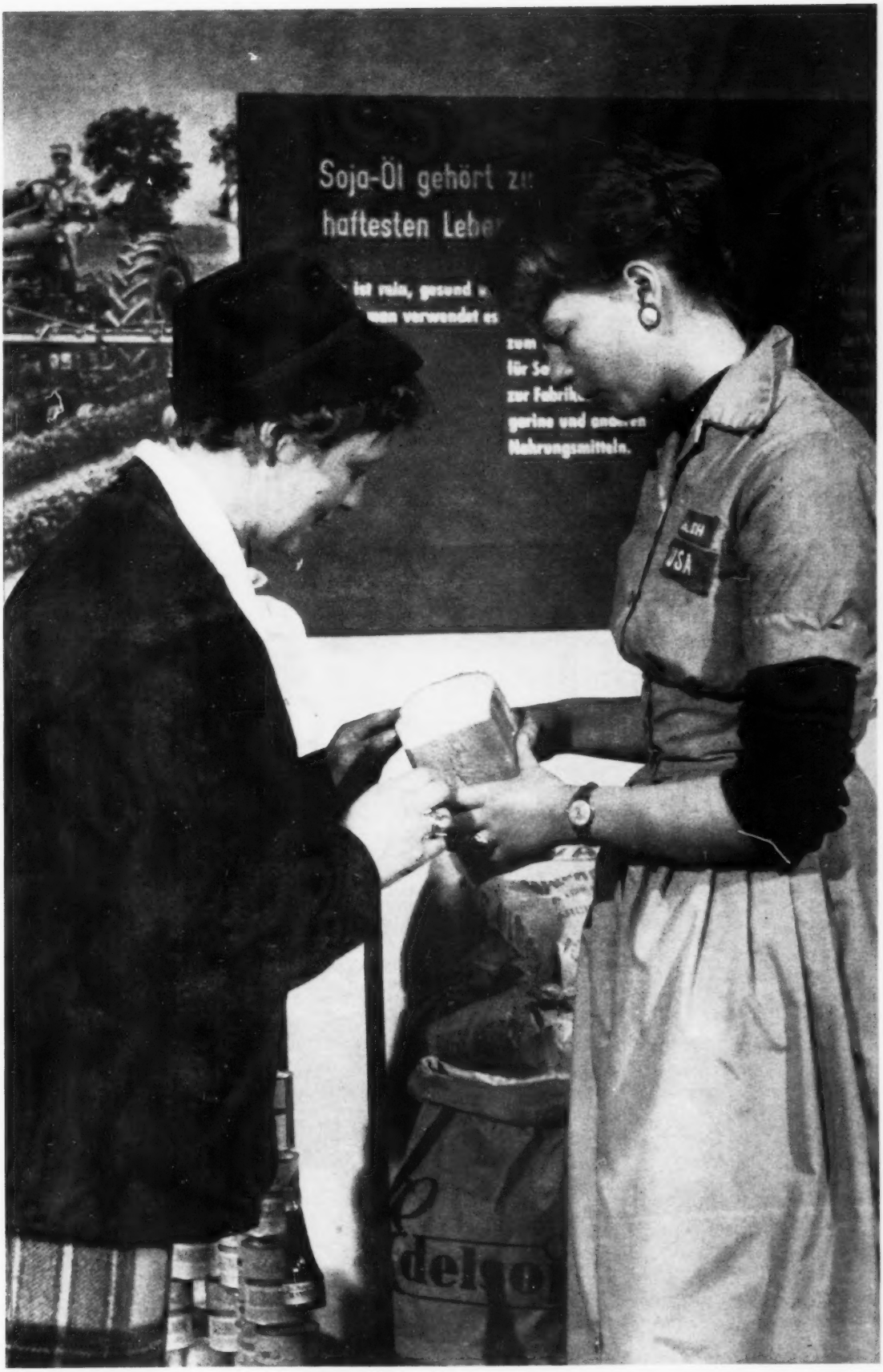
A primary benefit of reasonable protein meal prices is the forestalling of further inroads on the farmers' market by synthetic urea for feed. Past history establishes conclusively that once synthetic products such as urea attain a market they remain to plague future farm marketings.

Thus, by necessary and proper governmental assistance in the export marketing of the surplus oils and fats, farmers received a *greater* return amounting to over $215 million for soybeans sold *plus* savings in expense through lower feed costs. The government did not acquire soybeans to add to its costly stockpiles, and millions of hungry people over the world were able to buy with their own currencies the bounty of our fields and factories. Here at home farmers did not have to restrict soybean production and processors minimized shutdowns. U. S. labor was utilized in the processing and transportation of products of the soybean.

Also, there was no big carryover to jeopardize operations of farmers, government or industry in handling the new record 1957 crop.

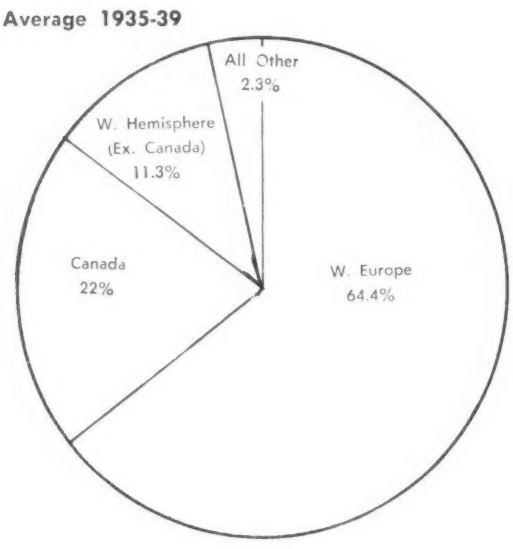
SOYBEAN PRODUCTION U. S. & WORLD

	UNITED STATES	CHINA-MANCHURIA	OTHER	WORLD TOTAL
Average 1935-39	56,167,000 bu.	358,960,000 bu.	47,282,000 bu.	463,720,000 bu.
1957	491,421,000 bu.	335,000,000 bu.	30,478,000 bu.	883,295,000 bu.

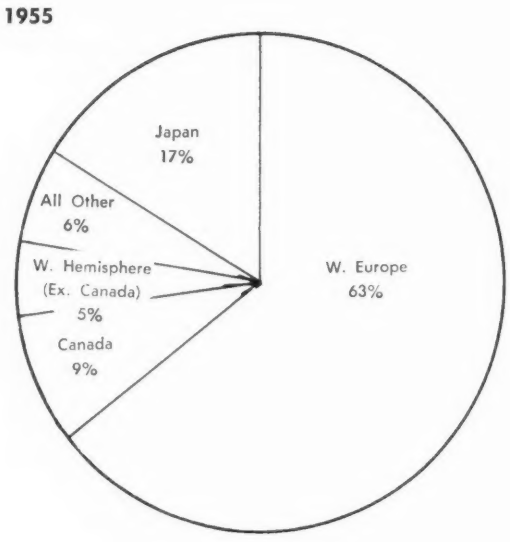


German housewife learns about soy bread at trade fair in Cologne, Germany. A P.L.480 project.

U. S. SOYBEAN EXPORTS (percentage of crop)



5.5 million bushels



116 million bushels

Another basic fact to be understood is that the foreign currencies *are being used constructively.*

From these foreign currencies acquired through the P. L. 480 program the United States derives many benefits such as meeting defense needs over the world, construction of military air bases, economic and market development, student exchange and many other useful projects. Over $32 million in foreign currency has been tentatively earmarked for market development purposes on agricultural products.

These market development projects are being developed and carried on in cooperation with the private trade, both U. S. and foreign. Generally, the USDA defrays part of cost with foreign currency acquired under P. L. 480. USDA guides and follows the work through its Foreign Agricultural Service. The U. S. private trade group helps develop the project and pays for the necessary dollar costs. The foreign groups, which help carry out the project, meet part of the local costs.

An example of the cooperative nature of the market development projects is the one in Japan. In this project the American Soybean Association and the various soybean trade groups in Japan have established a Japanese-American Soybean Institute. This Institute will foster closer relationships between the soybean trade in the two countries, exchange technological know-how to encourage use of U. S. soybean products in food and other products, develop a closer relationship between Japanese and U. S. methods of handling, sampling and grading, establish mutual understandings as to trading practices and methods, and disseminate appropriate educational and promotional material in Japan.

The general technique of moving soybeans through the normal channels of trade by government assistance in the marketing of the oil fraction is of tremendous significance. It is vastly superior to the system devised primarily for grains and cotton of government *loans and CCC acquisitions*, for the following reasons:

1—The increase in net farm income is greater than any possible government costs.

2—More soybean meal is available at reasonable prices, thus providing better balanced rations and better net returns to livestock and poultry producers.

3—The soybean crop moves through *the normal channels of trade*—and not into government storage.

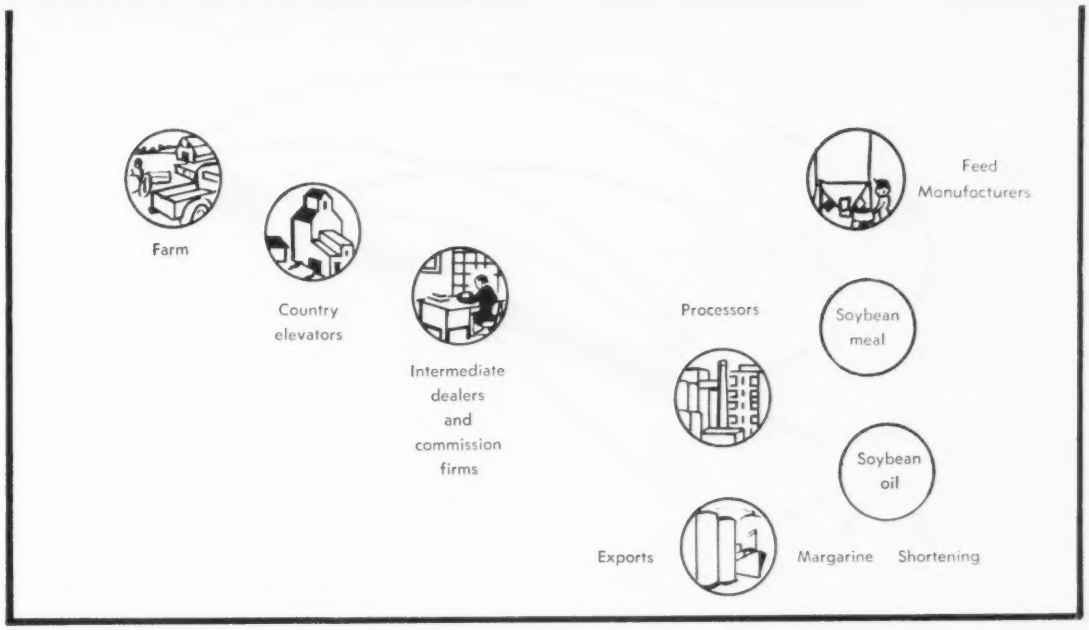
4—Processing plants run more efficiently with no shutdowns and loss of employment caused by government soybean acquisitions.

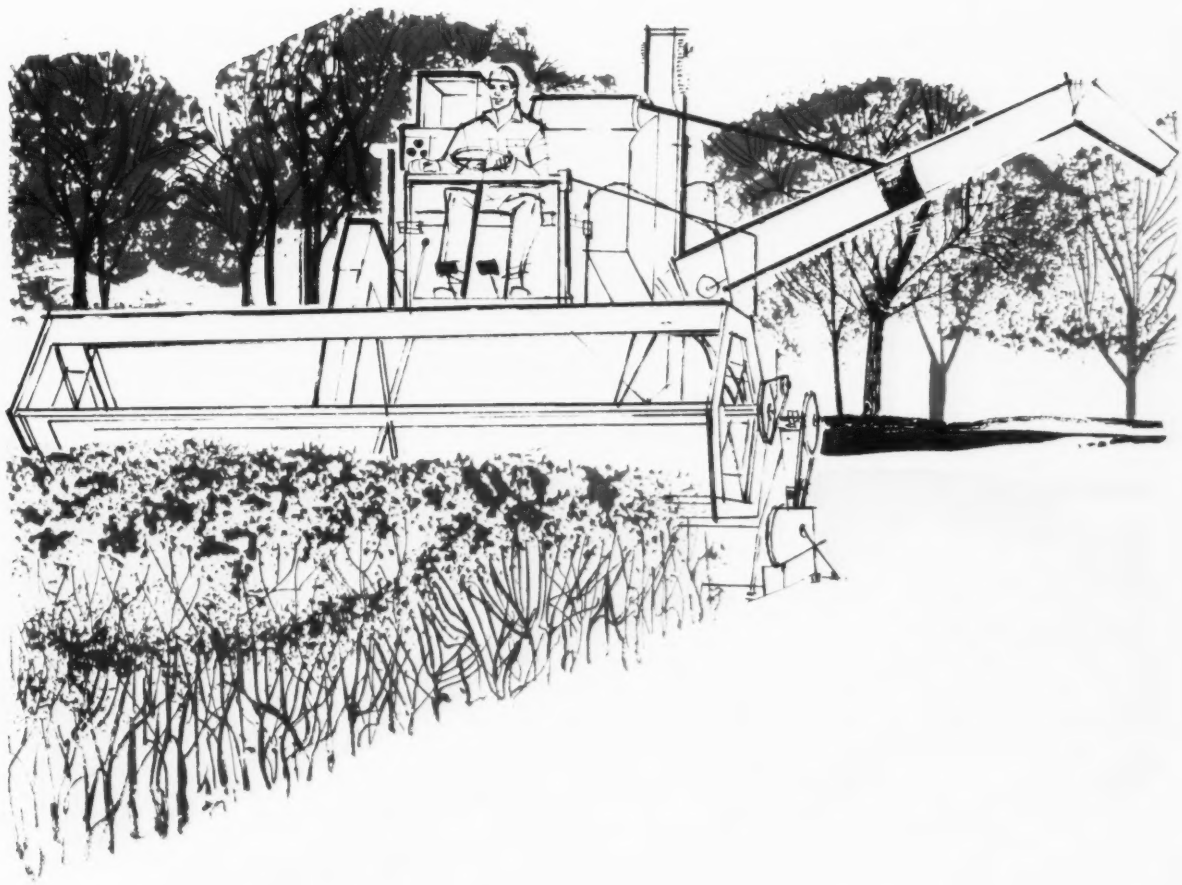
5—Exporters and importers of soybeans are commercial buyers in the open market—not "bargain hunters" from government hoards.

THE FUTURE

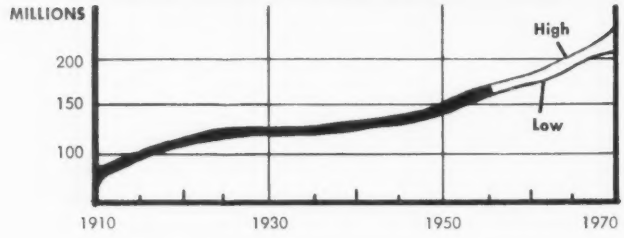
EXPANSION in the demand for food fats and oils in the United States depends entirely on population growth.

MARKETING CHANNELS FOR SOYBEANS





GROWTH OF U. S. POPULATION



TOTAL WORLD POPULATION
(BILLIONS OF PEOPLE)

1920	1.8
30	2.0
40	2.25
50	2.50
56	2.72
60 (ESTIMATED)	2.85
75 " "	3.30-3.50

A recent study on "The Long Run Demand for Farm Products" by the USDA shows a per capita consumption of 45.5 pounds in 1975. As already stated, the per capita consumption of edible fats and oils is inelastic in the United States. This is generally recognized by research workers and the fats and oils trade. Thus within reasonable limits consumption is not affected by price.

U. S. population is expected to be one-third higher by 1975 than in 1955. The following chart shows minimum and maximum estimated growth through 1975. The table shows estimates of the increase in world population.

The soybean industry will share in the expected growth of the U. S. population. And in the growth of the expanding national economy which reputable economists now estimate will about double current levels by 1975. A constantly increasing production of soybeans is needed to meet these needs—and the expanding needs of friendly countries abroad.

The estimated annual increase in U. S. population alone requires an additional 110 million pounds of edible fats and oils each year. At the end of 20 years an additional 2.2 billion pounds annually will be needed. This is equivalent to the oil production from over 10 million acres of soybeans. The population in the rest of the world will also increase. Current estimates indicate the population in 1975 outside the United States will be higher by 500-600 million than in 1956.

The expanding population abroad offers large and important potential markets for the U. S. farm economy—already the world's largest exporter of oils and fats. This additional requirement will be 8-10 million tons per year by 1975, only part of which is expected to be produced abroad.

Proper promotion, market development and overcoming trade barriers (including dollar shortages) will enable the United States to merchandise growing quantities of edible fats and oils abroad to meet the world needs.

The soybean is expected to provide the largest part of this expanding requirement. The soybean is the only major source of edible oil and protein meal grown as an oilseed. Other U. S. sources are byproducts, and production is dependent on factors other than the demand for edible fats or oils. If by market development work abroad the United States can increase consumption of fats and oils in other countries by an average of only 1 pound per capita, *vast markets will be created.* The improvement in living standards in many countries is obvious. The potential is there.

Similarly, vast untapped markets exist for increasing supplies of meal. Demand for soybean meal is elastic. At reasonable competitive prices, it is possible to increase use of this high protein product. A balanced ration means greater feeding economy. It can compete with synthetic feeds such as urea.

The mixed feed industry is in its infancy abroad. With good market development work soybean meal will find a ready market at reasonable price levels. Much work will have to be done in assisting foreign users to develop the know-how laboriously acquired here.

There is still room for considerable research looking toward new higher yielding varieties of soybeans and new varieties which can produce well in irrigated and other new areas of the United States. Reduction in cost of production can and will be attained through improved technology and research.

While industrial uses of soybean products have been much publicized, they are *currently* a relatively minor utilization. But certainly the record of soybean products in the drying oil field, as a plastic ingredient, as an adhesive, as a sizing material, fertilizer, to name a few, is replete with success.

* * * * *

What new uses will be developed to increase the farmers' market for this bean of gold?

The soybean is the crop with a future.

Its course must be charted through the cooperative efforts of farmers, grain buyers, processors, research workers, mixed feed manufacturers, the boards of trade, oil refiners and users and exporters, and the government for the continued benefit of mankind.

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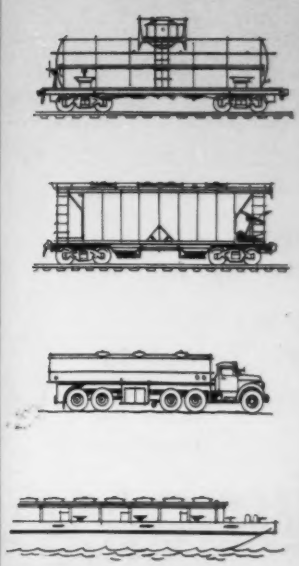
This SOYBEAN DIGEST EXTRA feature prepared and published as a public service by the Andreas Foundation of Mankato, Minn., and the Lauhoff Foundation, Box 571, Danville, Ill.

THIS WE BELIEVE

It is our purpose continually to maintain a high level of efficiency in soybean processing; to develop new uses and new markets for soybean products; to employ the most practical and economical methods of transportation. Through the combination of these efforts we strive to narrow the spread between what a farmer receives for his products and what he pays for his feeds. We believe this is our challenge. It is a responsibility we accept.



Honeymead

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Announce 1957 Crop Sales Policy

THE U. S. DEPARTMENT of Agriculture has announced the sales policy for 1957-crop soybeans taken over following the May 31, 1958, maturity date for price-support loans and purchase agreements. The USDA also announced that the same selling policy will apply to any 1956-crop soybeans remaining in the Commodity Credit Corp. inventory after May 31, 1958.

The CCC-owned soybeans, either 1957- or 1956-crop, will be sold for domestic crushing or for export at the higher of the domestic market price or the 1957 basic loan rate at point of production for grade No. 2 soybeans plus 1.5¢ per bushel carrying charges for each month or part of a month beginning June 1, 1958, and also plus an announced "quality adjustment factor." The soybeans will be sold in store with all storage and handling charges paid to the date of purchase.

The quality adjustment factor will be based on the average of premiums and discounts which reflect the difference between grade No. 2 soybeans on which the basic price-support rate is established and higher quality soybeans which are the basis of commercial trading. The use of this fixed "quality adjustment factor" will reduce the work and time involved in establishing minimum sales prices. This factor will be announced prior to May 31, 1958.

In determining actual sales prices for each lot, the minimum price or the domestic market price, whichever is higher, will be adjusted by market premiums and discounts for quality factors such as moisture, damage, and foreign material.

The minimum sales price for soybeans that have been moved by CCC from points of production to subterminal or terminal storage locations will be the higher of (1) the market, or (2) the average basic loan rate in store at points of production plus the announced factor and carrying charges, and also plus average freight, tax cost, and Uniform Grain Storage Agreement in-elevation charges at subterminal or terminal storage point.

This sales program will remain in effect until Oct. 1, 1958, when an appraisal will be made of the soybean situation and further announcement will be made as to whether this program will be continued, modified, or terminated.

Raise Lambs on Meal

ORPHAN LAMBS may not have to be raised on a bottle.

Emmit Haynes, extension animal husbandman at Iowa State College, says Illinois researchers have reported it is possible to raise lambs largely on soybean meal.

For feeding orphan lambs, Haynes points out, it is important to see that the lamb gets colostrum during its first day. Milk from another ewe which recently lambed can be used. Then, Haynes advises, use warmed cow's milk, undiluted and unsweetened.

If you want to try getting the lamb off the bottle, start offering a little soybean meal in a pan or trough. When the lamb gets to eating it, taper off with the milk as the lamb increases his eating of the soybean meal. As early as possible, start the lamb on cracked grain in addition to the soybean meal.

Haynes says the Illinois researchers report that lambs raised on soybean meal don't look good, but they do survive, and they don't require the extra time involved in feeding from a bottle every few hours.

ANALYTICAL SERVICE TO THE SOYBEAN INDUSTRY SINCE 1935

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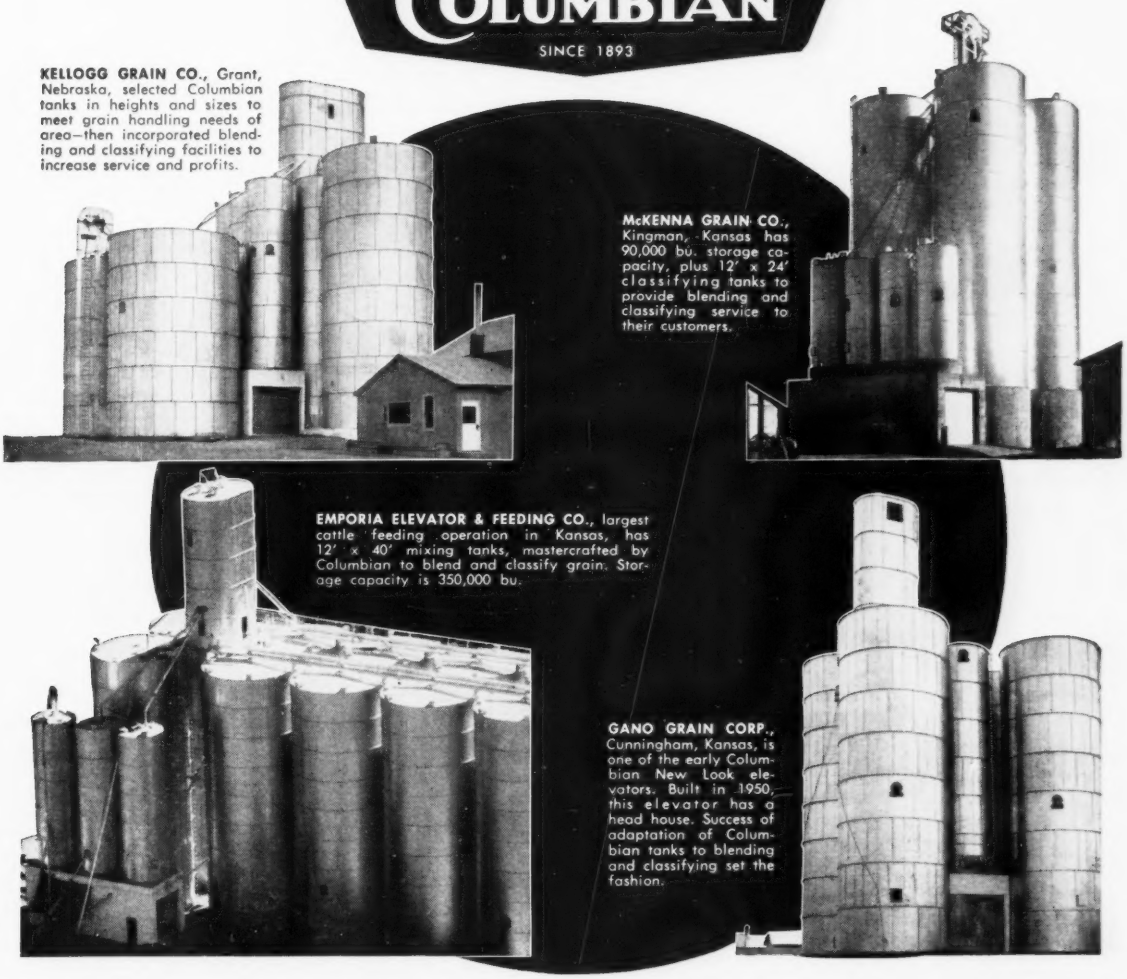

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FEEDING

Soybean Oil Helpful in Bloat Control

SOYBEAN OIL in grain reduced the danger of bloat and also increased daily gains of steers at Iowa State College, Richard H. Johnson, ISC dairy researcher, said in a report to the American Society of Animal Production in Chicago.

He was associated in the experiment with dairymen N. L. Jacobson and L. R. Brown, and statistician P. G. Homeyer.

Beside testing bloat control with steers on pasture, the Iowa researchers used 22 dairy animals confined to dry lot and receiving green chopped alfalfa (soilage).

"When we sprinkled crude soybean oil over alfalfa soilage at the rate of ¼ pound per 1,000 pounds body weight of animal per day we effectively controlled bloat," states Dr. Jacobson. This occurred even during a period when we experienced severe bloating in the control group.

"The addition of soybean oil and other types of oil to grain before the animals were placed on alfalfa pasture greatly reduced bloat but was not as effective as placing the oil on the forage. This apparently is due to the fact that the oil is altered rather soon in the rumen and needs to be consumed at the time the bloat provocative forage is consumed.

"However, when relatively high levels of oil are fed, the effect seems to last for a somewhat longer period. In this method one would have to feed perhaps a pound of oil per animal per day to have reasonable assurance of bloat control under all circumstances.

"This may not be entirely impractical since the weight gains of animals fed the oil were considerably greater—½ pound daily or more—than those of the control group."

In addition to soybean oil the investigation included lecithin, lard oil and penicillin.

Effectiveness and Practicability of Some Oils, Penicillin, Decyl Alcohol, and Lecithin in the Control of Alfalfa Bloat. By R. H. Johnson, L. R. Brown, N. L. Jacobson and P. G. Homeyer, Iowa State College, Ames, Iowa.

High Meal Level

WHEN SOYBEAN oil meal was a new product on the market, efforts were directed toward the possibility of supplying the protein from vegetable rather than animal sources for broiler feeding, due to a price differential in favor of the former.

More recently this difference has disappeared, so the question becomes one of the values contributed by the protein concentrate. Add to this problem the fact that today's broiler possesses an inherent capacity for growth which was undeveloped in the past.

Nebraska workers have fed soybean and meat meals as concentrates in a diet for growing chicks at levels of 30% each. These meals have also been fed in combinations by adding or withdrawing 5% of each meal so that 30% of the diet was made up of a mixture of the two meals.

Day-old New Hampshire chicks were used. The basal diet consisted of ground yellow corn 56%, dehydrated alfalfa meal 5%, wheat shorts 5%, mineral mixture 3%, and a good vitamin mixture 1%. The other 30% consisted of soybean meal or meat meal, or combinations of both.

Both meals had right at 50% crude protein by analysis. Individual rations ran about 23% crude protein.

The best growth was obtained with 30% of soybean oil meal in the diet. Decreased growth also occurred with each added increment of 5% of meat meal as soybean oil meal was withdrawn, with the lowest gain recorded on the 30% meat meal diet. However, these differences were not marked until 15% meat meal was added.

High Levels of Meat, Bone Meal and Soybean Meal in Rations for Broilers. By C. W. Ackerson, University of Nebraska. Feed Age, April 1957, pages 48, 49, 50. 71 Vanderbilt Ave., New York 17, N. Y.

Cottonseed Meal

A BIBLIOGRAPHY of publications reporting research on cottonseed meal for feeding of poultry and swine has just been published and is now available for distribution.

Improved Cottonseed Meals for Feeding Poultry and Swine. ARS 72-10. Single copies free. Southern Utilization Research and Development Divison, P. O. Box 7307, New Orleans 19, La.

Adds New Nematode Control Areas

SIXTEEN FARMS and two areas of several sections each were added to the regions regulated because of the soybean cyst nematode in Arkansas, Kentucky, Missouri, North Carolina, and Tennessee, effective Dec. 10, by the U. S. Department of Agriculture.

Involved in the extensions are: Arkansas, one farm in Crittenden County and two farms and two localities in Mississippi County; Kentucky, four farms in Fulton County; Missouri, two farms in New Madrid County; North Carolina, one farm each in Camden and New Hanover Counties and four farms in Pender County; and Tennessee, one farm in Obion County. There is no change in the regulated area in Mississippi.

Six civil districts in Dyer County, Tenn., have been removed from their regulated status. Repeated surveys in these districts have shown them free of soybean cyst nematode infestation.

Quarantine regulations provide that certain products and articles may move from infested areas only under certification or permit issued by USDA.

Roots of lush-growing soybean plants may be supporting high populations of soybean cyst nematodes that will attack 1958 plantings in some infested areas, says the U. S. Department of Agriculture.

On the other hand, parts of fields that show heavy damage now may be supporting only a relatively small number of nematodes. Nematodes build up rapidly on healthy, vigorous root systems, but more slowly on the poor root systems found on plants attacked early in the season.

First discovered in North Carolina in 1954, the soybean cyst nematode has since appeared also in parts of Tennessee, Missouri, Arkansas, Kentucky, and Mississippi. The pest attacks roots of soybeans, lespedeza, common vetch, snap beans, and adzuki beans.

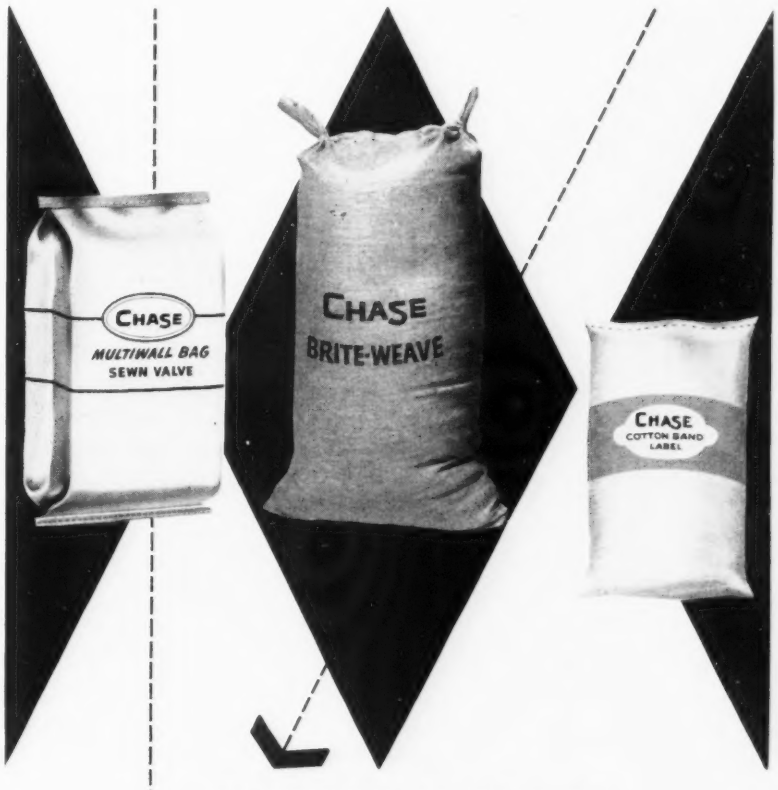
"Some soybean growers whose fields show no apparent damage tend to discount the nematode's destructive potential," says E. D. Burgess, in charge of plant pest control for USDA's Agricultural Research Service.

"Our pest surveyors find, however, that at the end of the growing season they're likely to find large numbers of nematodes on roots of healthy-looking plants—ready to go to work next year — and few on heavily damaged plants. Heavy attack and early damage reduce the root system, so the nematode population buildup is limited by available food."

According to Albert L. Taylor, USDA nematologist, soybean cyst nematodes reproduce only when feeding on living plant roots. First invasion is always on young roots, and is always damaging. However, light attack early in the growing season does not prevent development of a healthy root system that can support a large nematode population.

Just how much nematode feeding damages plant growth and yield depends on many things—when and how many nematodes initially attack, how fertile the soil is, and how much water is available. Plants with root systems that are not too severely damaged can get along all right, provided other growth factors are favorable.

Low soil temperatures keep nematodes inactive, so some crops get off to a good start before nematode feeding starts.



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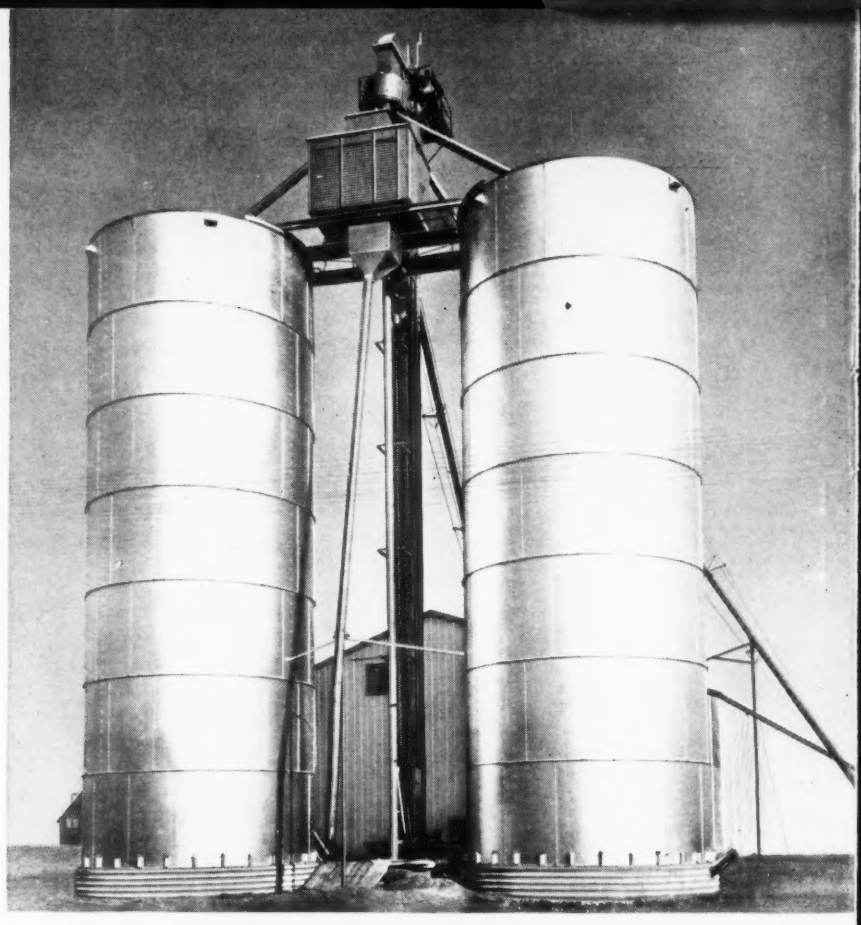

Grain sorghums are stored in this new Butler bolted steel tank installation in Abernathy, Texas. Panhandle Steel Buildings of Amarillo handled the construction for the owner, The Service Grain Company.

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USDA Cuts Crop Estimate 12 Million Bu.

THE DEPARTMENT of Agriculture pared its Nov. 1 estimate by almost 12 million bushels, to 479.8 million bushels from 491.4 million in its annual crop report issued Dec. 17.

USDA raised its estimate of per acre yield, from 22.7 to 23.1 bushels, but cut its earlier estimate of acres to be harvested by almost a million acres, and now estimates that only 20.7 million acres were harvested for beans, just a tenth of a million acres above last year.

The 23.7 bushels per acre yield is the highest of record, and compares with 22.3, the previous high in 1949.

USDA states there was some abandonment of 1957 soybean acreage due to drought in a few areas, particularly the East Coast, some extremely late soybeans that did not mature, and snow and flood damage in several states at harvest time.

Some soybean acreage was lost in Kentucky, Missouri, Arkansas and Tennessee due to November floods. Rains and snow delayed harvest in Minnesota and Iowa.

There was still considerable acreage to be harvested in late December in the East Coast states of Virginia, and North and South Carolina.

And at least a small acreage remained to be harvested in many other states both north and south. Though percentagewise the part of the crop still in the fields in northern states was mostly small, it appeared there would be some loss in a number of states.

Many late harvested beans were too high in moisture for safe storage and were sent direct to processing plants.

Processors report that oil content of 1957-crop soybeans is higher than normal and protein content is low. Processors are reported paying a premium for high-protein-content beans in a few cases for use in production of 50%-protein meal.

New Insecticide

PHOSDRIN insecticide, a new systemic organo-phosphate manufactured by Shell Chemical Corp., recently received U. S. Department of Agriculture label acceptance for use against aphids, leafhoppers and grasshoppers attacking soybeans.

This new product has the unique feature of quickly killing insects, then rapidly breaking down within the plant into harmless compounds. Because of its short residual life, this new insecticide can be used throughout the season up to one day before harvest.

Like most phosphate insecticides, Phosdrin insecticide is highly toxic to man, but the hazards are minimized when it is handled according to label directions and precautions.

SOYBEAN FOR BEANS

State	Acreage harvested[1]			Yield per acre			Production		
	Average 1946-55	1956	1957	Average 1946-55	1956	1957	Average 1946-55	1956	1957
	1,000 acres			Bushels			1,000 bushels		
N. Y.	6	8	6	16.2	14.0	18.0	99	112	108
N. J.	23	45	44	19.0	24.0	14.0	432	1,080	616
Pa.	23	21	17	17.4	18.5	13.0	400	388	221
Ohio	1,011	1,301	1,421	21.4	24.0	23.0	21,793	31,224	32,683
Ind.	1,660	2,142	2,163	21.8	24.0	24.5	36,334	51,408	52,994
Ill.	3,735	4,649	4,974	23.0	28.5	25.5	85,530	132,496	126,837
Mich.	101	200	236	19.4	21.0	22.0	1,987	4,200	5,192
Wis.	43	85	101	14.0	15.5	17.0	605	1,318	1,717
Minn.	1,216	2,627	2,549	18.2	20.0	21.5	22,682	52,540	54,804
Iowa	1,742	2,500	2,792	22.0	20.0	26.0	38,190	50,000	72,592
Mo.	1,310	1,821	1,637	18.0	20.0	21.5	23,005	36,420	35,196
N. Dak.	30	177	184	12.6	13.0	18.5	404	2,301	3,404
S. Dak.	84	224	186	14.8	11.5	16.5	1,232	2,576	3,069
Nebr.	77	152	137	20.3	11.5	27.0	1,456	1,748	3,699
Kans.	341	355	214	11.7	8.5	11.5	3,959	3,018	2,461
Del.	66	150	147	15.6	23.0	17.5	1,067	3,450	2,572
Md.	84	201	189	16.8	22.0	18.5	1,487	4,422	3,496
Va.	148	271	248	17.0	21.5	20.0	2,525	5,826	4,960
N. C.	274	416	416	15.6	21.5	21.0	4,286	8,944	8,736
S. C.	87	276	329	11.2	11.0	15.5	987	3,036	5,100
Ga.	29	83	100	10.1	13.5	14.0	305	1,120	1,400
Fla.	[2] 16	34	45	[2] 18.4	22.0	23.0	[2] 290	748	1,035
Ky.	118	133	130	17.2	22.5	20.5	2,051	2,992	2,665
Tenn.	174	240	187	17.8	16.5	22.5	3,092	3,960	4,208
Ala.	70	110	122	18.8	21.0	20.0	1,310	2,310	2,440
Miss.	320	732	615	15.6	16.0	19.0	4,988	11,712	11,685
Ark.	617	1,509	1,383	17.0	18.0	23.5	10,083	27,162	32,500
La.	45	135	119	16.2	17.0	21.0	779	2,295	2,499
Okla.	36	25	30	10.5	8.0	17.0	395	200	510
Texas	1	20	17	[2] 13.2	22.0	26.0	8	440	442
U. S.	13,486	20,642	20,738	20.2	21.8	23.1	271,689	449,446	479,841

[1] Equivalent solid acreage. (Acreage grown alone, with an allowance for acreage grown with other crops.) [2] Short-time average. USDA crop reporting board annual summary.

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BUTLER MANUFACTURING COMPANY

Another in the continuing series of advertisements by the **Glidden Chemurgy Division** to expand the markets for soybean products.

How manufacturers improve products because GLIDDEN GIVES BETTER MILEAGE FROM THE SOYBEAN

Soybean derivatives may help improve your product and reduce production costs —just as they have for petroleum in the family car, foods in the picnic basket, and even rubber and plastic parts in the portable radio. Reason—Glidden Chemurgy has taken soybeans out of the dream stage for almost every industry you can name.

In the BUILDING MATERIALS industry, Glidden *Alpha Protein*® helps the manufacturer of insulating board produce a waterproof, durable board that can be painted without difficulty. Because *Alpha Protein* has a high tolerance for other ingredients in the coating, it reduces coating and waterproofing from two operations to one—a saving in both production time and cost. *Alpha Protein* is also used in the manufacture of almost all the washable wallpaper produced in the United States, in coating high-quality printing paper, and in the manufacture of latex-base paints.

And . . . Glidden is the *leading* soybean processor continuing operations beyond the crude products level, to produce *special-purpose* derivatives that may help improve your product. Call or write Glidden Technical Service for ideas and assistance.

USES OF THE SOYBEAN IN INDUSTRY:

ADHESIVE
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BLENDER
In chewing gum, petroleum

DISPERSING AGENT
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EMULSIFIER
Baked goods, margarine, petroleum, textiles, soap, cosmetics, pharmaceuticals

NUTRITIVE SUPPLEMENT
In foods, pharmaceuticals

PARTING AGENT
In rubber and plastics

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CHEMURGY DIVISION
THE GLIDDEN COMPANY
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MANUFACTURERS OF INDUSTRIAL AND EDIBLE SOY FLOURS AND PROTEIN, CRUDE AND SPECIAL-PURPOSE LECITHINS, STEROIDS, SOYBEAN MEAL AND OILS.

LATE REPORTS

PROCESSING OPERATIONS. Reported by the Bureau of the Census for October and November.

Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stock, November 1957-October 1957 (short tons of 2,000 pounds)

	Production		Shipments and transfers		Stocks end of month	
	November 1957	October 1957	November 1957	October 1957	Nov. 30, 1957	Oct. 31, 1957
Soybean:						
Cake and meal	683,163	652,251	653,687	648,344	88,112	58,636
Flour	9,326	10,295	9,262	10,278	1,688	1,624
Lecithin	1,501	1,467	(NA)	(NA)	1,386	1,330

NA—Not available.

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, November 1957-October 1957 (tons of 2,000 pounds)

	Net receipts at mills		Crushed or used		Stocks at mills	
	November 1957	October 1957	November 1957	October 1957	Nov. 30, 1957	Oct. 31, 1957
U. S.	1,288,576	2,653,638	876,810	842,509	2,414,002	2,002,236
Illinois	293,196	1,060,351	315,265	318,980	794,473	816,542
Indiana	71,254	302,643	79,353	80,045	230,815	238,914
Iowa	174,869	329,464	140,470	139,003	253,666	219,267
Kansas	(1)	(1)	(1)	(1)	(1)	(1)
Kentucky	23,011	(1)	20,288	(1)	(1)	(1)
Minnesota	80,225	64,039	52,396	55,299	42,953	15,124
Missouri	46,645	115,305	30,826	32,968	114,644	98,825
Nebraska	(1)	(1)	(1)	(1)	(1)	(1)
No. Carolina	(1)	(1)	2,432	(1)	17,340	(1)
Ohio	116,634	369,753	98,108	80,103	318,993	300,467
Texas	(1)	(1)	(1)	(1)	(1)	(1)
All other	482,742	412,083	137,672	136,111	641,118	313,097

[1] Included in "All other" to avoid disclosure of figures for individual companies.

Soybean products: Production and stocks at oil mill locations, by states, November 1957-October 1957

	Crude oil (thousands of pounds)				Cake and meal (tons)			
	Production		Stocks		Production		Stocks	
	November 1957	October 1957	Nov. 30, 1957	Oct. 31, 1957	November 1957	October 1957	Nov. 30, 1957	Oct. 31, 1957
U. S.	313,366	306,746	102,376	103,306	683,163	652,251	88,112	58,636
Ill.	114,737	118,291	33,836	36,359	241,525	244,084	34,713	23,467
Ind.	27,730	28,754	7,436	13,943	63,031	63,313	7,032	4,577
Iowa	49,233	50,773	11,485	11,070	112,241	112,244	7,826	7,677
Kans.	(1)	(1)	(1)	(1)	(1)	(1)	276	(1)
Ky.	7,230	(1)	(1)	653	15,778	(1)	(1)	(1)
Minn.	19,740	17,241	24,572	20,172	41,648	42,061	8,370	3,704
Mo.	10,868	12,112	1,243	1,483	23,742	26,214	2,734	2,559
Nebr.	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
N. C.	733	(1)	610	(1)	1,878	(1)	620	(1)
Ohio	34,633	28,275	8,496	6,898	78,366	63,586	6,123	4,725
Tex.	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
All other	48,462	51,300	14,698	12,728	104,954	100,749	20,418	11,927

[1] Included in "All other" to avoid disclosure of figures for individual companies.

STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday or Saturday preceding date of report (1,000 bu.)

	Dec. 3	Dec. 10	Dec. 17	Dec. 24
U. S. soybeans in store and afloat at domestic markets				
Atlantic Coast	2,531	2,732	1,241	2,936
Gulf Coast	3,023	3,237	3,847	1,577
Northwestern and Upper Lake	3,390	3,476	4,071	4,605
Lower Lake	13,965	13,162	12,624	12,875
East Central	2,428	2,482	2,344	3,600
West Central				
Southwestern and Western	1,370	1,466	1,526	1,438
Total current week	26,707	26,555	25,653	27,031
Total year ago	20,061	18,344	18,428	16,930
U. S. soybeans in store and afloat at Canadian markets				
Total current week	0	0	93	39
Total year ago	530	439	620	566
Total North American commercial soybean stocks				
Current week	26,707	26,555	25,746	27,070
Year ago	20,591	18,783	19,048	17,496

Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:

	Nov. 27	Dec. 6	Dec. 13	Dec. 20
Chicago	378	576	565	288
Duluth	.....	41	43	66
Indianapolis	27	56	29	19
Kansas City	151	145	262	133
Minneapolis	484	580	375	166
Omaha	27	41	89	35
Peoria	13	62	54	99
Sioux City	25	58	60	34
St. Joseph	13	35	29	34
St. Louis	9	10	20	7
Toledo	124	215	248	177
Totals	1,251	1,819	1,774	1,058
Last year	791	1,326	993	667
Total Chicago soybean stocks	11,894	10,994	10,757	10,804

OILSEED PRODUCTION. 1935-1957 crop years. Compiled from official sources by U. S. Department of Agriculture.

United States: Soybean, cottonseed, peanut, and linseed oils, production, averages 1935/36-1939/40 and 1945/46-1949-50, and marketing years 1950/51-1956/57 (1,000 short tons)

	Vegetable oils			
Period or marketing year[1]	Soybean[2]	Cottonseed	Peanut[3]	Linseed[4]
Average 1935/36-1939-40	182	722	32	104
Average 1945/46-1949/50	866	682	114	327
Annual 1950/51	1,363	598	106	443
Annual 1951/52	1,306	876	62	304
Annual 1952/53	1,428	912	26	250
Annual 1953/54	1,383	1,034	76	376
Annual 1954/55	1,689	868	10	860
Annual 1955/56	1,942	947	42	347
Annual 1956/57[5]	2,189	841	52	409

[1] Year beginning Oct. 1 for soybean, peanut and linseed oils; year beginning Aug. 1 for cottonseed oil. [2] Includes oil equivalent of exports of soybeans. [3] Includes oil equivalent of shelled peanuts exported for crushing abroad. [4] Includes oil equivalent of exports of flaxseed; excludes oil equivalent of imported flaxseed. [5] Preliminary.

FUTURES TRADING. Soybean futures trading, with an estimated 4.3 billion bushels on the Chicago Board of Trade in 1957, decreased 26% compared with 1956, the U. S. Department of Agriculture reports.

The 1957 soybean oil futures volume, primarily on the Chicago Board of Trade, was approximately 10.6 billion pounds; cottonseed oil futures on the New York Produce Exchange, 4 billions; and lard futures on the Chicago Board of Trade, 2.2 billions.

Mitchell, Hutchins & Co.

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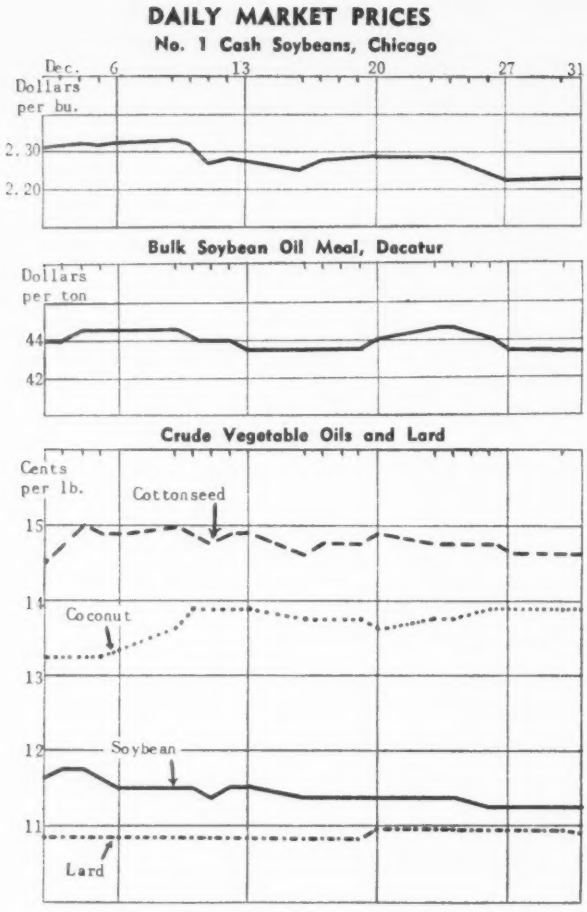
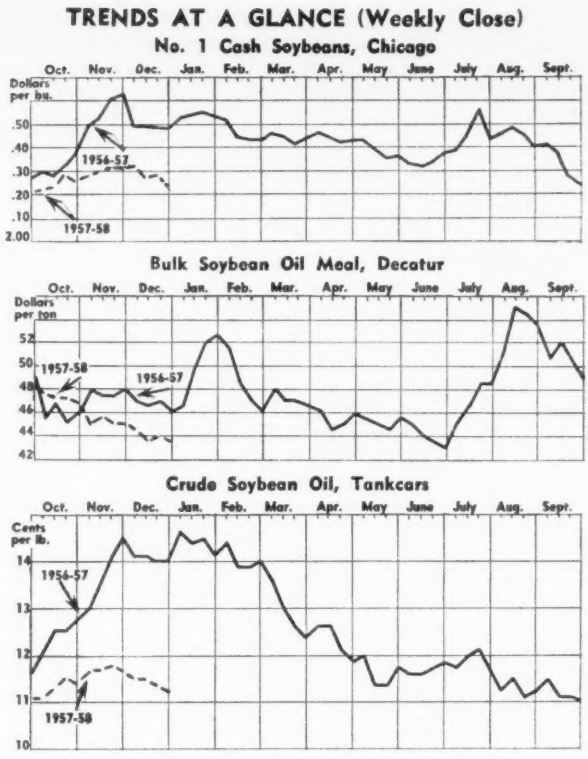




December Markets

MARKETS in December were weak and slumped toward the year's end. Cash soybeans lost 7¢ to 8¢ during the month; soybean oil ½¢ and meal 50¢.

Bearish factors included:

1—Plentiful supplies of meal with demand for the nearby product at a standstill.

2—Lack of export news and the delay in announcement of new P. L. 480 business. However, exports of soybeans were running well ahead of a year ago.

3—Increased stocks in processors hands and the continued narrow processing margin.

4—Large stocks of soybeans in Chicago warehouses available for delivery on the January contract.

Bullish factors:

1—The government's final crop report paring the total soybean crop by almost 12 million bushels, and the cotton crop by .8 million bales. There was some loss in the field of both soybean and cotton crops.

2—Heavier processing operations by 3 million bushels from last year for October and November.

3—December snows helped the meal market.

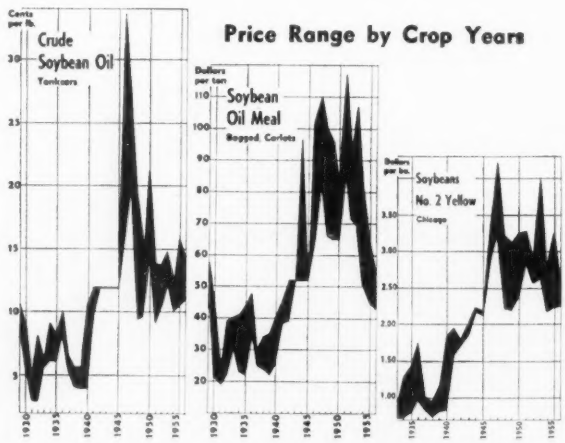
4—Continued light country offerings.

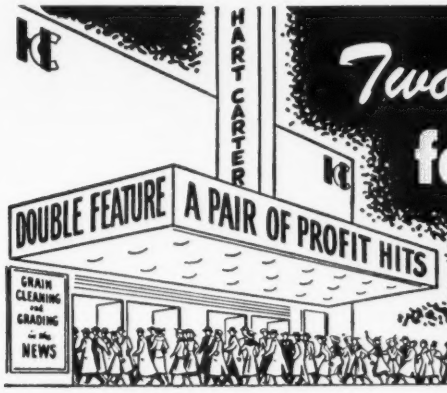
5—The belief by governmental officials that over 100 million bushels of soybeans will go under the support program. However, a smaller bushelage of beans was under support Nov. 15 than a year ago.

1956 AND 1957 SOYBEAN CROPS

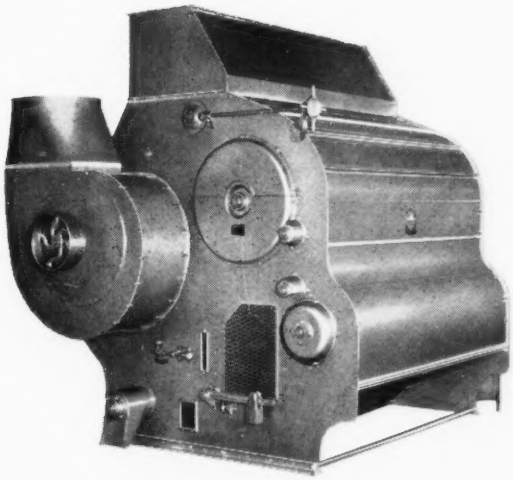
	1957	1956
Soybeans crushed October-November	57,253,322.7 bu.	54,464,048.1 bu.
Total soybeans under price support as of Nov. 15	21,920,550.0 bu.	34,655,975.0 bu.
Total soybeans inspected for overseas shipment including lake shipments to Canada Oct. 1-Dec. 20	37,164,878.0 bu.	32,662,686.0 bu.

BYPRODUCTS. The price of soybean fatty acids remained at 15¼¢ per pound during December. Acid soybean soap stock delivered Midwest remained at 6¢ and raw soybean soap stock declined from 2¾¢ to 2¼¢.



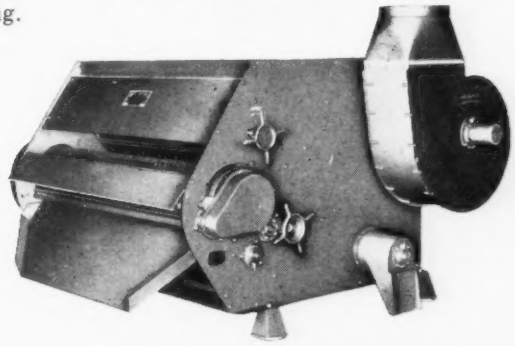


Two All-Star Performers for ROUGH SCALPING and ASPIRATING SOYBEANS and GRAINS



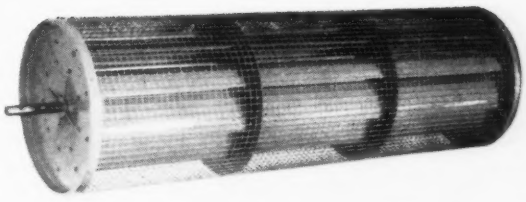
24" x 76" CARTER SCALPERATOR

On soybeans going directly to storage the Carter Scalperator does a good job of both rough scalping and aspirating. It removes both coarse and light foreign materials. The Scalperator also is used on beans or grains when they're turned for cooling. Note that this machine can be used on other grains without change of equipment. The 24" x 76" Scalperator is 84" wide, 117" long, and 96" high. The 24" x 60" size of this model is 101" long.



11" x 60" CARTER SCALPERATOR

The 11" x 60" Scalperator is ideal for smaller runs. The 11" x 60" is 79" wide, 89" long, and 48" high . . . fits neatly into work space. The 11" x 42" size of this model is 71" long. All Scalperators are rotary in motion, thus operate without vibration.



THE BASIC UNIT—*Hart-Carter "Squirrel Cage" Scalping Reel. Baffle plate construction retards flow of beans through the reel, insuring thorough rough scalping. The reel is self-cleaning.*

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The CARTER SCALPERATOR

GRITS and FLAKES . . . *from the World of Soy*

Seedburo Appointments

Victor R. Ruelas

George W. Piontek

Rex E. Yocum, president of **Seedburo Equipment Co.**, Chicago, announces the appointment of George W. Piontek as assistant Steinlite sales manager and Victor R. Ruelas as export manager.

Mr. Piontek was formerly with the USDA Soil Conservation Service and the USDA engineering and watershed planning unit at Fort Worth, Tex. He served 4 years in the U. S. Air Force.

Mr. Ruelas was formerly associated with D. C. Andrews & Co. as foreign freight forwarder and was with General Auto Export Co. for 3 years as assistant export manager.

General Mills Oil Sales

Sewall Andrews, vice president of **General Mills, Inc.**, and general manager of the soybean division, announces the appointment of new sales representatives to handle refined and blown soybean oil to the technical trade in several midsouth areas.

Thompson-Hayward Chemical Co. will sell bulk soybean oils and will warehouse drummed stocks through several office locations where experienced managers have become well known in the protective coating trade.

Wes Rufi will handle the Dallas, Tex., area. Recently, Wes celebrated 25 years with the Thompson-Hayward organization. Wes Skillern is in Houston, Tex.; Bill Swart in Lubbock and Fred Wright in San Antonio.

R. F. Wagner has Little Rock, Ark., under control. Oklahoma uses two men—"Bing" Helbing in Oklahoma City and George Harrington in Tulsa; and Louisiana, "Bill" Lonnecker at Shreveport and Frank Condon in New Orleans.

Tennessee and northern Mississippi will be covered by E. F. Bouldin in Memphis.

Fred Haas Retires

Frank C. Haas, vice president of **Archer-Daniels-Midland Co.**, Minneapolis, and manager of its chemical products division, is retiring from his present position but will continue with the firm as a consultant. He plans to return to Cleveland, Ohio, where he will operate the Winfield Equipment Co., Inc., handling equipment for the oils, fats, oilseeds and flour milling industries.

Promotion of Burton W. Schroeder to manager of the ADM chemical products division, has been announced by Thomas L. Daniels, president.

Schroeder, a vice president and director of ADM, has been assistant manager of the division since last February. He joined ADM in 1939.

Ashleigh Boles Retires

Ashleigh P. Boles, director of agricultural development for the **Missouri Pacific Railroad**, has retired from active duty after 31 years service with the company.

Mr. Boles joined the Missouri Pacific in 1926 as the railroad's horticultural agent. He has been a familiar figure at farmers' meetings and much interested in the soybean and other crops in his territory.

A. P. Boles

He has frequently attended American Soybean Association conventions and is well known to ASA members.

Howes Executive Dies

John T. Willis, 70, sales executive of **S. Howes Co.**, Silver Creek, N. Y., for 30 years, died recently. He had been associated with the milling industry since the age of 16.

John T. Willis

The son of a flour miller, Mr. Willis was the father of George Willis, present sales manager of S. Howes Co.

C. Park Hanneman, 51, a vice president and director of the **Penola Oil Co.**, New York, died recently after a brief illness. Mr. Hanneman joined Penola, a marketing affiliate of Standard Oil Co. (N. J.), in 1939 and had been a vice president and director since 1943.

Shanzer Manufacturing Co. has just announced the completion of a new model 20 drier installation for the David M. Barton Gin Co. in Catron, Mo. The new unit will handle up to 300 bushels per hour.

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Filter Cloths

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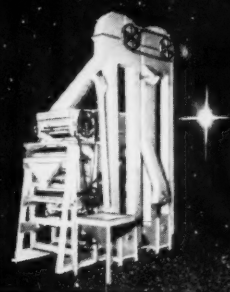

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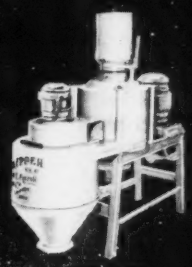
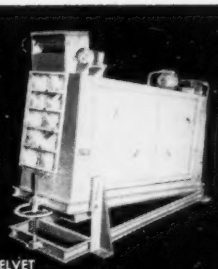
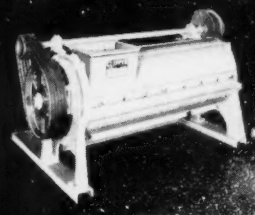


EDDY GIANT HULLER SCARIFIER



VELVET DODDER MILLS



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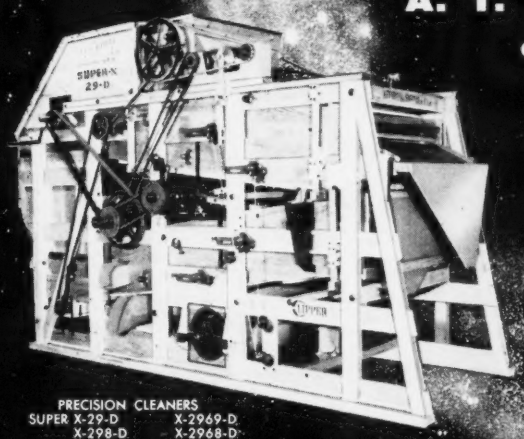
star performers in the A. T. FERRELL orbit



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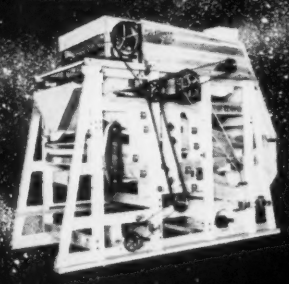
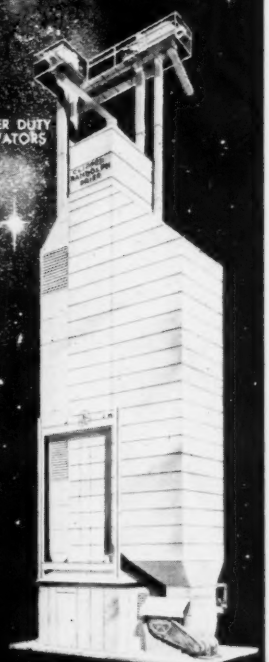
SUPER X-29-D X-2969-D
X-298-D X-2968-D



SUPER 2248-BD HI-CAPACITY CLEANER



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WASHINGTON DIGEST

Sees Chance for Early P.L. 480 Action

By PORTER M. HEDGE
Washington Correspondent for The Soybean Digest

THERE WAS some prospect at the end of December that the long-delayed Public Law 480 program for Spain would be unblocked and the way opened for the 1957-58 movement of oils and other crops under 480 to get into full swing.

The office of Senator Hubert Humphrey of Minnesota has been putting a blaze under officialdom in Washington, particularly the State Department, to come to agreement on the Spanish program.

It has been held up for months, due in part to the late start of the program as the result of late passage of the authority to extend the program, in part to inability of officials to come to terms on the size of program the Spanish want, in part due to the Cooley amendment which provides for use of up to 25% of foreign currencies received for U. S. foods for loans to U. S. businessmen operating within the country.

Reasons for Delay

In December Senator Humphrey sent his administrative assistant, Herbert Waters, to Spain to find out what was holding back the Spanish agreement. Waters reported three major reasons:

1—The Spanish government wants a P. L. 480 program more than three times the size of the first agreement offered by the United States.

The present agreement calls for $73 million. The Spanish want as much as $263 million in P. L. 480 commodities to be paid for in their own currencies.

2—The Spanish object to as much as a fourth of the pesetas paid for U. S. commodities being loaned to U. S. business firms operating within the country.

The reason, Spanish officials gave Waters, is that the country is undergoing a period of inflation due partly to the millions being invested by the United States in Spanish bases, and partly to the Spaniards' own program of construction, road building and other activities which are just beginning to catch up with the times.

Spain needs U. S. foods and fibre to supply the needs of an expanding economy, Waters was told, and to keep inflation from wiping out the economic gains. Spanish officials are said to fear additional investment on the part of U. S. business firms would merely create more inflation.

3—The agreement has been held up partly because of the desire of Spain for a much greater volume of U. S. cotton than the Department of Agriculture thus far has been willing to supply through P. L. 480.

Senator Humphrey's office has indicated that the State Department now appears willing to ease up on the provision making a comparatively large volume of funds available to U. S. businessmen now.

Waters was also told by Spanish officials that Secretary of Agriculture Benson told them a $100 million P. L. 480 program was as far as USDA could go, that a limit of 700,000 bales of cotton had been placed on the amount available for P. L. 480 exports, that he didn't want to break through this ceiling on cotton for fear it would increase support prices for cotton next year.

Spain wants more cotton to keep its mills running.

Wants 150,000 Tons

There are 110,000 tons of edible oils in the original Spanish 480 program. Waters says the Spanish will take "almost unlimited" amounts of oils if they can finance them.

As soon as the first agreement is reached, says Waters, the Spanish want to begin negotiations for another. They want at least 150,000 tons of edible oils from the United States under this program.

Waters thinks Spain is a potential market for U. S. soybean and cottonseed oils for a long time to come.

"Spain recently purchased 11,000 tons of oil with scarce dollars," Waters said. "As soon as this sale had been consummated, the oil was allocated into villages of Spain, and

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arrangements were made to move it to villages as fast as it was received."

Waters said at first the Spanish viewed U. S. oils with distrust. Now they have acquired a taste for them.

"There is even some prospect that the Spanish would take some soybean oil meal under the P. L. 480 program," Waters reported.

He said the Spanish government has been planning a big egg production program and had considered subsidizing egg output. But if feeds are available under the P. L. 480 program, Waters says, "officials are talking now of subsidizing with feed instead of currency."

Senator Humphrey's office is hopeful that if the Spanish program can be unblocked it will open the way for movement of the 480 program all down the line. The Senator is fearful that if the programming of the additional $1 billion in commodities voted by Congress last August isn't well under way by the time Congress reconvenes, there will be hesitancy to approve further authorizations.

Secretary of Agriculture Benson has announced he will ask for authority to use another $1½ billion of surplus stocks in the program during the 1958-59 fiscal year.

Senator Humphrey is chairman of a Senate agriculture subcommittee investigating the 480 program. Humphrey has indicated he will ask for at least $2 billion additional for the program in the year ahead.

ASA Considers Commodity Programs

AMERICAN Soybean Association representatives considered proposals for cotton and corn legislative programs and a general field crops program at the meeting of the National Conference of Commodity Organizations at Kansas City Dec. 12-13.

The Conference, made up of 35 different commodity groups including the American Soybean Association, is proposing the consideration of a commodity-by-commodity approach to solution of agricultural problems. ASA President John Sawyer, London, Ohio, and John Butterfield, Pana, Ill., director, represented the Association at the meeting.

The group advocated a number of far-reaching changes in farm programs including:

1—A greatly enlarged program of land retirement, with 60 to 70 million acres to be retired from production to offset the increased efficiency of farmers and allow current surpluses to be utilized by the markets.

2—Abandonment of cotton price supports so cotton can compete freely in foreign trade, a larger cotton acreage and probable direct government payments.

3—A sliding scale of price supports for corn with higher guarantees for those who take more land out of production. No farmer raising corn or sorghum could receive price supports for feed grains or soybeans unless he complied to some extent with the corn-sorghum program.

The American Soybean Association position according to Saywer: ASA is not in favor of allotments for soybeans and has always asked for supports set at a level to maintain a free position according to Sawyer: ASA would not endorse any program that would divert more acres to soybeans by restricting acreages of other crops. It was pointed out that soybeans are already in a precarious position from a supply standpoint. ASA in the past had endorsed cross-compliance in principle.

Sawyer said the reasoning favorable to other commodity programs advanced at the meeting was that the wheat and cotton programs should increase the acreage devoted to these crops and take the acreage pressure off soybeans, and that the corn-sorghum program should not increase soybean acreage.

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We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

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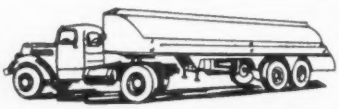

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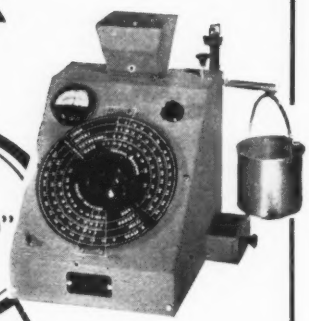

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IN THE MARKETS

FACTORY USE VEGETABLE OILS for September and October 1957. Reported by Bureau of the Census (1,000 lbs.)

Primary materials: Factory production and consumption, and factory and warehouse stocks, October 1957-September 1957

	Factory production		Factory consumption		Factory and warehouse stocks	
	October 1957	September 1957	October 1957	September 1957	Oct. 31, 1957	Sept. 30, 1957
Cottonseed, crude	223,092	114,715	142,251	80,506	108,132	64,027
Cottonseed, refin'd.	130,973	75,529	116,520	94,429	94,699	81,569
Soybean, crude	306,746	244,415	266,133	223,008	194,319	182,123
Soybean, refined	251,803	210,216	246,821	221,872	110,813	103,781
Hydrogenated vegetable oils—						
Edible:						
Cottonseed	32,569	28,410	32,050	27,794	14,087	14,447
Soybean	134,167	113,206	121,617	*106,287	41,104	38,192
Other	7,503	4,381	5,319	4,109	2,883	2,257
Inedible	(2)	(2)	1,486	1,518	1,758	1,919
Margarine[1]	137,803	120,737	(NA)	(NA)	29,391	27,303

* Revised. NA—Not available. [1] Data for stocks exclude quantities held by consuming factories. [2] Not shown to avoid disclosure of figures for individual companies.

Factory consumption of vegtable oils, by uses, during October 1957

	Edible products			Inedible products			
	Shortening	Margarine	Other edible	Soap	Paint and varnish	Lubricants and similar oils[1]	Other inedible[2]
Cottonseed, refined	14,115	713	2,572	(3)	.....	.....	88
Soybean, crude	.....	.....	.....	55	376	.....	2,028
Soybean, refined	47,636	8,737	3,982	46	6,845	51	7,699
Foots, vegetable, raw and acidulated (100% basis)	.....	.....	.....	2,182	(3)	.....	1,703
Hydrogenated vegetable oils, edible:							
Cottonseed	12,481	17,295	2,274	.....	.....	.....	.....
Soybean	40,119	79,041	2,434	.....	.....	.....	(3)
Other	1,945	(3)	1,319	.....	.....	.....	.....
Hydrogenated vegetable oil, inedible	.....	.....	.....	.....	.....	514	552

[1] Includes quantities consumed in lubricants, greases, cutting oils, dielectric oils, core oils, brake fluids, and metal working. [2] Quantities consumed in linoleum and animal feeds are included in the above totals. Data for fats and oils consumed in chemicals and linoleum and oilcloth, which were previously shown separately, are now included in "Other inedible" while quantities consumed in core oils, cutting oils, brake fluids, dielectric oils and metal working, formerly included in this total are now classified in "Lubricants and other oils." [3] Not shown to avoid disclosure of figures for individual companies.

Consumption of fats and oils in fat splitting

	1957			1956	
	October	September	Jan.-Oct. Cumulative	October	Jan.-Oct. Cumulative
Soapstocks					
Vegetable foots	6,428	8,037	77,376	6,162	83,291

U. S. Census Bureau.

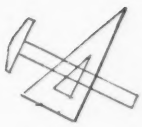
MELLORINE. Estimated by the Agricultural Marketing Service at 1,785,000 gallons, the November production of mellorine and other frozen desserts made with fats and oils other than milk-fat was at about the same level as the November output last year, but was 7% below the same month in 1955. In the first 11 months of this year, mellorine production was down 4% from the total for the same months last year.

Production declined 24% from October to November this year, compared with a drop of 34% at this time last year and a decrease of 18% between these months in 1955.

Production of mellorine and other frozen desserts made with fats and oils other than milk-fat, United States, 1957

	1953*	1954*	1955*	1956*	Estimated 1957	Change in 1957 from 1955	Change in 1957 from 1956
	Thousand gallons					Percent	
January	1,064	1,503	1,758	1,807	1,835	+ 4	+ 2
February	1,162	1,995	1,873	2,057	2,000	+ 7	— 3
March	1,607	2,339	2,681	2,665	2,415	—10	— 9
April	1,767	2,720	2,729	2,694	2,605	— 5	— 3
May	2,201	2,703	3,291	3,469	3,220	— 2	— 7
June	3,139	3,623	3,549	3,677	3,280	— 8	—11
July	2,978	3,904	3,643	3,749	3,960	+ 9	+ 6
August	2,731	3,622	3,825	3,741	3,695	— 3	— 1
September	2,582	3,136	3,095	2,819	2,870	— 7	+ 2
October	2,229	2,443	2,356	2,693	2,335	— 1	—13
November	1,464	1,759	1,925	1,788	1,785	— 7	0
Eleven month total	22,924	29,747	30,725	31,159	30,000	— 2	— 4

* From enumerations.



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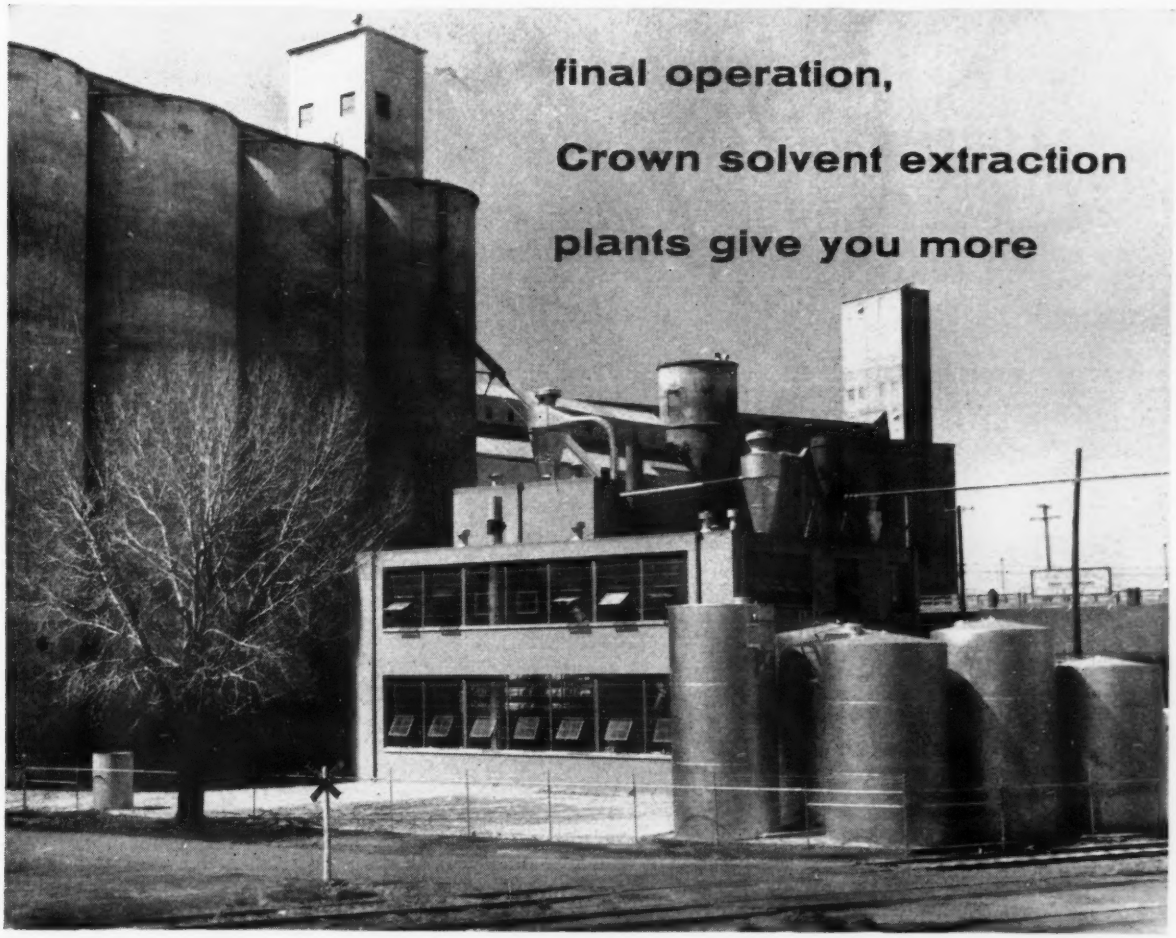

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PRICES. Average prices for soybeans received by farmers, reported by Agricultural Marketing Service (dollars per bushel).

Average farm price			Effective parity	Av. price as percent of parity	National average price support rate		
Nov. 15, 1956	Oct. 15, 1957	Nov. 15, 1957	Nov. 15, 1957	Nov. 15, 1957	1955 crop	1956 crop	1957 crop
2.27	2.04	2.04	3.04	67	2.04	2.15	2.09

Average farm and parity prices from crop reporting board.

Feedstuffs: Average price per ton in wholesale lots at principal markets (Dollars)

	5-year 1951-55 average	Nov. 1956	Sept. 1957	Oct. 1957	Nov. 1957	Dec. 3, 1957	Percent Dec. 31 is of 5-yr. av.
Soybean meal	85.30	64.90	68.70	63.85	61.90	61.25	72
Cottonseed meal	74.25	63.60	60.35	58.35	58.60	60.20	81
Linseed meal	73.35	65.25	60.45	58.60	57.20	56.50	77
Copra cake and meal	73.00	68.50	60.10	57.25	54.05	53.50	73
Peanut meal	75.15	58.50	48.30	52.80	52.40	51.50	69

INSPECTIONS. Soybeans inspected by grades and percent, reported by Agricultural Marketing Service.[1]

Grade	Oct.-Nov. 1956		Oct.-Nov. 1957		November 1956		October 1957		November 1957[2]	
	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.
No. 1	20,202	17	31,499	22	4,538	13	26,104	28	5,395	12
No. 2	46,317	38	61,461	44	12,886	38	41,228	44	20,233	43
No. 3	29,184	24	32,423	23	8,983	26	17,209	18	15,214	32
No. 4	18,873	15	12,353	9	4,661	14	7,601	8	4,752	10
Sample	7,125	6	3,371	2	2,905	9	2,008	2	1,363	3
Total	121,701	100	141,107	100	33,973	100	94,150	100	46,957	100

[1] Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. [2] Of the November 1957 receipts, 3,750 bushels were black, 9,259 mixed, 500 brown, and the remainder yellow soybeans. Inspections of soybeans in November included 12,245,000 bushels as cargo lots, 8,041,984 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed grain inspectors at all markets.

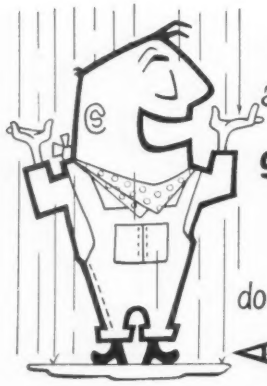
MEAL PRODUCTION. Oilseed meal production, 1954-57, reported by Agricultural Marketing Service.

Oilseed meal production (1,000 tons)

	Monthly production			Season's production		
	Oct. 1957 prelim-inary	Sept. 1957	Oct. 1956	Oct.-Sept. 1956-57	Oct.-Sept. 1955-56	Oct.-Sept. 1954-55
Soybean meal	652.3	517.5	657.1	7,509.3	6,545.8	5,704.8
Cottonseed meal	299.8	166.6	346.4	2,289.3	2,628.1	2,515.4
Linseed meal	50.9	55.2	74.5	575.5	581.7	544.8
Peanut meal	5.7	5.8	1.2	62.6	57.5	18.5
Copra meal	11.4	9.0	12.5	113.3	112.2	117.4
Total oilseed meals	1,020.1	754.1	1,091.7	10,550.0	9,925.3	8,900.9

PRICE SUPPORT. 1957-crop soybeans put under support through Nov. 15, 1957, compared with total of 1956 same date, reported by Agricultural Marketing Service (bushels).

Warehouse and farm-stored loans	Purchase agreements	Total under support through Nov. 15, 1957	Total under support through Nov. 15, 1956
21,758,743	161,807	21,920,550	34,655,975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EXPORTS. Preliminary data on U. S. exports of soybeans and soybean oil for October 1957, with comparable data for October 1956 and cumulative totals for the marketing year 1955-56 and 1956-57, reported by Foreign Agricultural Service, U. S. Department of Agriculture.

	Unit	October 1956	October 1957
Soybeans	bu.	10,243,126	9,887,564
Soybean oil:			
Crude	lb.	22,483,300	24,161,105
Refined but not further processed	lb.	4,518,207	4,856,456
Refined, deodorized and hydrogenated	lb.	55,165,761	9,049,130
Total beans and oil, oil equivalent basis	lb.	194,636,791	146,632,144

Soybeans: Inspections for overseas export by coastal areas, and country of destination, November 1957 (1,000 bu.)

Atlantic			
United Kingdom	1,003	West Germany	1,895
West Germany	149	Italy	38
Holland	248	Japan	3,356
Belgium	41	Poland	346
Norway	303	Denmark	770
Japan	214	Other	3
Poland	545	Subtotal	9,247
Formosa	320	**Lake Ports**	
Israel	352	Canada	914
Subtotal	3,175	Grand total	13,336
Gulf		Total January-November 1957	72,703
Belgium	623	Total January-November 1956	53,547
Holland	2,216		

Note: Data are based on weekly reports of inspections by licensed grain inspectors for overseas export and do not include rail or truck movement to Canada or Mexico. In some cases the ultimate destination of the grain exported is not shown on the inspection reports, therefore the quantity of each country may vary from official census data which are based on custom declarations. Agricultural Marketing Service.

July-October 1957 P. L. 480 export shipments (pounds)

	September-October 1957		July-October 1957	
	Metric tons	Quantity	Metric tons	Quantity
Cottonseed oil	1,881	4,148,000	9,793	21,590,000
Soybean oil	6,679	14,725,000	7,876	17,364,000
Linseed oil	65	144,000	214	472,000

Foreign Agricultural Service, U. S. Department of Agriculture.

Domestic exports: Agricultural products 1955-56 and 1956-57

	Unit	Year beginning July 1 Quantity 1955-56 Thou-sands	1956-57 Thou-sands	Value 1955-56 1,000 dollars	1956-57 1,000 dollars
Oil cake and oil-cake meal:					
Cottonseed	ton	214	33	12,659	2,022
Linseed	ton	145	73	9,122	4,229
Peanut	ton	13	30	830	1,811
Soybean	ton	401	447	25,081	26,278
Other	ton	0	1	0	10
Total oil cake and meal	ton	773	584	47,692	34,350
Oilseeds:					
Copra	lb.	159	85	13	7
Cottonseed	lb.	31,617	22,198	2,720	2,045
Flaxseed (56 lb.)	bu.	10,444	2,548	37,985	8,945
Soybeans (60 lb.)	bu.	71,097	76,686	179,579	195,753
Other oilseeds	lb.	33,649	56,803	1,778	3,149
Total oilseeds				222,075	209,899
Fats and oils:					
Soybean oil:					
Crude	lb.	40,347	398,031	6,092	59,592
Refined—					
Not further processed	lb.	59,386	76,900	9,001	12,567
Deodorized, hydrogenated, etc.	lb.	271,607	451,490	43,107	72,587

Foreign Agricultural Service, U. S. Department of Agriculture.

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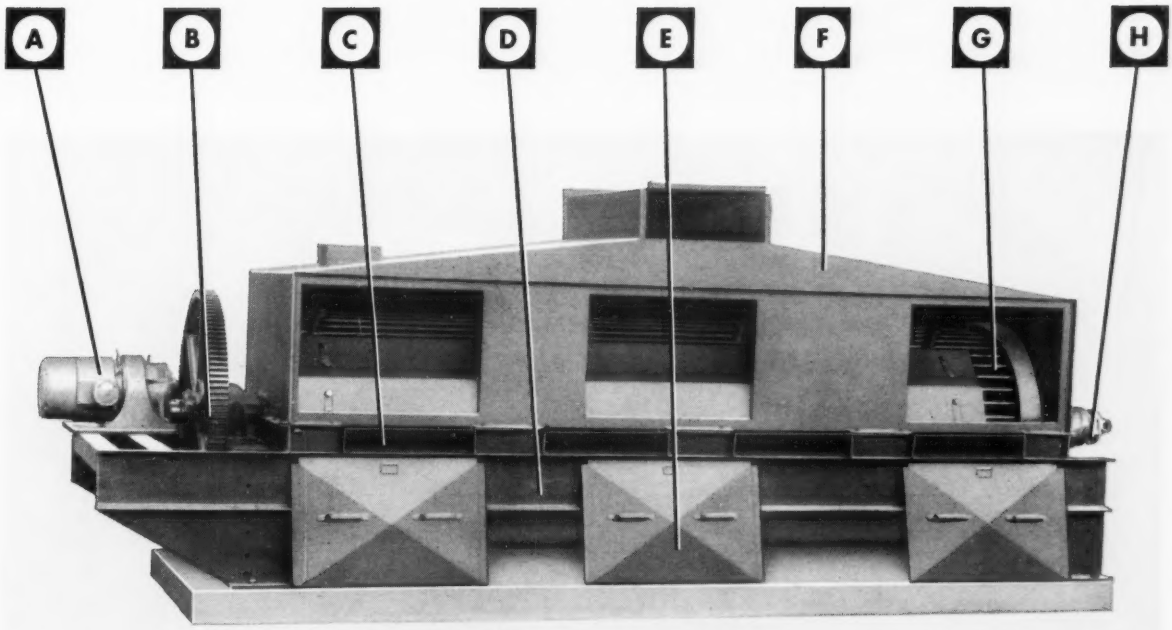

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